A Joint Professional Bulletin for US Field & Air Defense Artillerymen

Fires

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Fires

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ARTICLES

DEPARTMENTS

Correction: Keith Pannell, *the Cannoneer*, Fort Sill, Oklahoma, took the photo shown on right of Page 23 of the Sep-Dec 2007 *Fires* Bulletin. He won Honorable Mention in the 2007 *Fires* Photo Contest.

Email any corrections/changes to the Sep-Dec 2007 maps to firesbulletin@conus.army.mil and to the appropriate POCs: for FA: MAJ Jim Kopko, james.kopko@us.army.mil; for ADA: Kathy M. Doyle, kathleen.doyle1@us.army.mil.

Front Cover: SPC Brandon Malott, 11th Air Defense Artillery (ADA) Brigade, takes a fighting position against simulated opposing forces on McGregor Range, New Mexico, on 7 September 2007. (Photo by SGT Jonathan Montgomery, 11th ADA Brigade Public Affairs)

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PURPOSE: Founded in 2007, ***Fires*** serves as a forum for the professional discussions of US Army and Marine Field Artillery (FA) and Army Air Defense Artillery (ADA) professionals, both active and Reserve Component (RC); disseminates professional knowledge about the FA's and ADA's progress, developments and best use in campaigns; cultivates a common understanding of the power, limitations and application of joint fires, both lethal and nonlethal; fosters joint fires interdependency among the armed services; and promotes the understanding of and interoperability between the FA's and ADA's active and RC units—all of which contribute to the good of the FA and ADA, Army, joint and combined forces, and our nation.

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(Organization, Doctrine, Material, Training)	(Organization, Doctrine, Material, Training)
DSN 978-5312 or (915) 568-5312	DSN 639-2204 or (580) 442-2204
ada_fires@bliss.army.mil	redleg@conus.army.mil

MG Robert P. Lennox Relinquishes Command of Fort Bliss

Major General (MG) Robert P. Lennox relinquished command of Fort Bliss, Texas, and the position of Commandant of the US Army Air Defense Artillery School (USAADASCH) on 9 January.

MG Lennox was the 149th Commanding General since the establishment of Fort Bliss in 1849, and the 23rd Commandant of USAADASCH since the inception of an ADA School at Fort Bliss in 1957. He was also the 17th Chief of the Branch since ADA's designation as an individual branch in June 1968.

During the relinquish-of-command and award ceremony, General William S. Wallace, Commanding General, US Army Training and Doctrine Command (TRADOC), recognized MG Lennox as a Soldier with exceptional depth, intellect and vision. He highlighted MG Lennox's contributions as the senior mission commander of the fastest growing power-projection installation in the Department of Defense and the largest maneuver area in the Army and cited his leadership and oversight, which enabled Fort Bliss and ADA to meet the challenges of Army transformation while supporting the War on Terrorism (WOT).

MG Lennox assumed command in June 2005 and, during his tenure, spearheaded the transformation of an ADA-centric installation to a mounted-maneuver installation of excellence.

While standing up brigade combat teams (BCTs), he ensured that organizational needs were acknowledged, resources were allocated and requirements were met to support every mission while continuously overseeing the largest continental US (CONUS) replacement center (CRC) in the Army. To date, the Fort Bliss CRC has processed, trained, deployed and redeployed more than 150,000 active and Reserve Component Soldiers, Sailors, Airmen and Marines in support of WOT.

MG Lennox approved major construction priorities, setting the conditions for the $3.2 billion Base Realignment and Closure (BRAC) expansion of Fort Bliss and Biggs Army Airfield. Working with local and national businesses, he contributed to the $1.3 billion privatization of installation housing.

MG Robert P. Lennox (right) relinquishes command of Fort Bliss, Texas, by passing the Command Colors to GEN William S. Wallace, Training and Doctrine Command Commander, on 9 January at Noel Field, Fort Bliss. CSM Robert S. Rodgers (center) acts as the Installation Color Guard NCO in Charge. (Photo by Kathleen M. Doyle)

As the Chief of ADA, he formed a strong alliance and working rapport with Major General (Retired) David C. Ralston, former Commander of Fort Sill, Oklahoma, and Commandant of the US Army Field Artillery (FA) School. Focusing on the BRAC-directed move of the ADA School, training brigade and designated units from Fort Bliss to Fort Sill, MG Lennox continued working with MG Ralston's successor, Major General Peter M. Vangjel, who took command on 13 September 2007. MG Lennox's leadership was instrumental in the successful stand-up of the virtual Fires Center of Excellence (CoE) on 1 June 2006.

Under MG Lennox's direction, ADA units began and continued the transformation process to modular design. He oversaw the design and implementation of an ADA Army Force Generation (ARFORGEN)-like model. Deployments and rotations, although frequent and requiring reset in transition, were conducted smoothly and without incident.

MG Lennox now is the Assistant Deputy Chief of Staff for Operations (G-3/5/7) in Washington, DC.

Brigadier General James L. Terry, the TRADOC Director of the Future Force Integration Directorate, Army Capabilities Integration Center at Fort Bliss, assumed the responsibilities of commander pro tem until Major General Howard B. Bromberg assumed command on 24 January.

Before assuming command of Fort Bliss and USAADASCH, MG Bromberg was the Chief of Staff for US Strategic Command (STRATCOM) at Offutt Air Force Base, Nebraska. He has served as the Deputy Director, Force Protection and Director, Joint Theater Air and Missile Defense Organization, J-8, the Joint Staff in Washington, DC.

MG Bromberg was the Commanding General of the 32nd Army Air Missile Defense Command, Fort Bliss, with duties as the Deputy Area Air Defense Commander (AADC), Coalition Force (CF) Air Component Command and Operation Enduring Freedom, Saudi Arabia; Deputy AADC, Joint Forces Air Component Command and Operation Noble Eagle, Fort Bliss; Deputy AADC, CF Air Component Command, Kuwait; and Deputy AADC, CF Air Component Command, Operation Iraqi Freedom, Iraq.

He also has served as the Operations Officer for the Defense Branch, J3, the Joint Staff, in Washington, DC; the Deputy Commanding General, USAADASCH and Fort Bliss; and the Commander, 11th ADA Brigade at Fort Bliss.

MG Lennox said, "Major General Bromberg's previous experiences make him the perfect candidate to shoulder the overwhelming responsibility of the continued growth of Fort Bliss and the future of the ADA Branch, and I have every confidence in his ability to lead us [ADA] into the future."

Patriot Master Gunner —Do You Measure Up?

By Command Sergeant Major Robert S. Rodgers, AD

The US Patriot force performed heroically during the advance on Baghdad in 2003, intercepting and destroying every Iraqi ballistic missile that threatened friendly forces. However, the complex and highly fluid Operation Iraqi Freedom (OIF) battlefield, with its crowded airspace and high risk of ground-to-air fratricide, illuminated the requirement for increased Patriot system and tactical expertise as well as greater situational awareness. The Air Defense Artillery (ADA) School responded by creating the Patriot Master Gunner Course.

The Patriot Master Gunner Course is one of ADA's biggest success stories. Since its inception in February 2004, 69 graduates have earned the title of Patriot Master Gunner. Nevertheless, because promotions and reassignments tend to demand master gunner expertise at battalion or brigade level, we still don't have enough master gunners at the battery level. In many units, functions that require this level of expertise are being performed by NCOs who are not school-trained and (or) certified.

Regrettably, not enough qualified ADA NCOs are applying for the Patriot Master Gunner Course. In an effort to encourage more NCOs to apply, the ADA School recently eliminated the entrance exam, but about half of the available 16 seats per class still go unfilled.

Challenging Course. Why aren't ADA NCOs beating down the door to get into the Patriot Master Gunner Course? The reason appears to be a fear of failure. The Patriot Master Gunner Course is a challenging course with a high attrition rate—but isn't that what makes the graduates elite?

When considering whether or not to apply for the course, Soldiers worry that a "failure to achieve course requirements" notation would look bad on their Department of the Army Form 1059 Academic Evaluation Reports. But instructors say Patriot NCOs are more than competent and that the attrition rate doesn't have to be as high as it is. Instructors point out that the graduation rate is much higher among students from units that set their Soldiers up for success by conducting precourse training programs. Every Patriot unit should establish similar precourse training programs at brigade or battalion level with certified Patriot Master Gunners serving as mentors and tutors.

Eligible NCOs. Sergeants (promotable) through master sergeants with Military Occupational Specialty (MOS) 14E Patriot Missile System Enhanced Operator/Maintainer or MOS 14T Patriot Launching Station Enhanced Operator/Maintainer are eligible to attend the Patriot Master Gunner Course.

The course is designed to teach NCOs how to develop gunnery training strategies effectively, train and certify crews on the Patriot weapons system and serve their units as subject-matter experts. Ultimately, Soldiers with the Patriot Master Gunner additional skill identifier (ASI) T4 offer commanders a myriad of Patriot-specific skills and capabilities to use at battery, battalion and brigade levels. But the benefits are not limited to these areas alone. Patriot Master Gunners support staff planners, organic and joint communications architects and joint warfighters as well as commanders by sharing the benefits of their education, experience and knowledge to increase the overall combat readiness of Patriot units.

Course Modules. The Patriot Master Gunner course consists of eight training modules.

Introduction. The introduction module refreshes NCOs on how the Army trains according to *Field Manual (FM) 7-0 Training the Force*, and *FM 7-1 Battle-Focused Training*. The Army Force Generation process and Combined Army Training Strategy also are highlighted. During a five-week period, students develop an 18- to 21-month training strategy briefing focused on a fictional high operational tempo Patriot battalion operating within the constraints of the contemporary operating environment. This briefing, which incorporates the Patriot battalion's mission essential task list and directives derived from the commander's guidance, is the first of two panel briefings students are evaluated on before graduation.

Patriot Live Fire. During the second module, students learn to plan and coordinate a Patriot live fire exercise at McGregor Range, New Mexico. The students are exposed to real-world procedures including the requisition, storage and management of live missiles and live missile reload procedures.

Students of Patriot Master Gunner Class 001-08 were involved directly in all facets of planning, supervision and implementation during the successful firing of three Patriot missiles at McGregor Range by the 6th ADA Brigade, Fort Bliss, Texas, on 15 October 2007.

Tactical and Engagement Operations. The third and fourth modules focus on tactical operations and engagement operations at both the Patriot fire unit engagement control station (ECS) and battalion information coordination central (ICC). In addition to learning the specifics of how an operator interacts with the system, the students learn battle-focus techniques that combine Patriot capabilities and limitations knowledge with engagement decision and weapons assignment criteria.

These modules spotlight on critical thinking during fix-or-fight, system initialization and mapping procedures. The modules also feature hands-on manual emplacement techniques.

Patriot-Specific Gunnery. The fifth module incorporates Patriot-specific Reticle Aim Levels (RALs) 1 through

17 and Gunnery Tables 1 through 12 comprehension. Students learn how to conduct fire unit and battalion ICC evaluations and learn new concepts in the virtual training realm that provide immediate feedback during RAL 11 certification. Other training in this module includes Scenario Generation Group training and the 32nd Army Air and Missile Defense Command's Standardized Patriot Evaluation and Assessment Reporting Program.

At the end of the fifth module, students brief a panel on their training strategies for preparing their units for a future wartime mission using the critical thinking and briefing skills they learned in the course so far.

Patriot Communications. During the sixth module, students expand their Patriot Master Gunner skill sets by concentrating on Patriot communications, which link Patriot battalions and brigades. Training includes joint communication architecture, lessons learned on achieving nominal connectivity within the broadening Patriot Communication Enhancements-2 upgrades and the entire series of communication equipment upgrades that occurred over the years. All post-deployment build software currently in use is addressed during this module. Students are evaluated on their understanding of how to identify their units' communications configurations and their proper integration both in the organic and joint worlds.

Defense Design Plan. The seventh and largest module of the course, spanning 118 hours, envelopes defense design planning and allows the students to use all of the skills and expertise learned in previous modules. A fictional theater of operations for the defense design is associated specifically with the training strategy mentioned earlier. Becoming skilled with Tactical Office Workstation Software while developing their plans, the students learn to approach planning from a master gunner's top-down perspective, beginning with intelligence preparation of the battlefield, used during the military decision making process, and how their Patriot systems are employed.

The criticality, vulnerability and recuperation process allows students to hone skills normally used by higher-echelon staff planners. The development and conversion of critical asset list to defended asset list training aids their understanding of the planning process and how higher-echelon decisions are made.

The second of the two panel briefings occurs at the end of this module, and it assesses the students' research abilities and helps develop critical thinking in both conventional and unconventional methods.

Completion. The last module consists of a "Future of ADA Update" briefing, a course after-action review and a final exam.

Goal: Increased Combat Readiness. The newly graduated Master Gunners are sent back to their units to achieve the course's chief objective—increasing the overall combat readiness of Patriot units.

The Army is completing its transformation to modular brigade combat teams that easily can be task-force organized for specific missions. So, filling empty seats in the Patriot Master Gunner Course with students who will take their expertise back to their batteries is a top priority.

At press time, ADA has Patriot Master Gunner authorizations for 56 MOS 14E and 57 MOS 14T NCOs at battery level, but only about 35 percent of these authorizations are filled by school-trained Master Gunners.

Our goal is to fill these positions with school-certified Master Gunners—this is an achievable goal. Patriot Master Gunner Course graduates dramatically increased the combat readiness of the Patriot force at brigade and battalion levels, and they can do the same at the fire-unit level. Every Patriot battery should make selecting and grooming Soldiers for the Patriot Master Gunner Course part of its overall training strategy.

For more information and specific criteria, visit the Patriot Master Gunner website at: https://airdefense.bliss.army.mil/secure/3-6%20ADA/master%20gunner.htm.

The author wishes to acknowledge the contributions to this column of the military and civilian instructors of the Patriot Master Gunner Course, 3rd Battalion, 6th ADA Brigade, Fort Bliss, Texas.

Senior Selection Board Resources

Whether considering a tasking to sit on a selection board for senior members of the Army NCO Corps or, as an NCO, reviewing your official military personnel file (OMPF) to be considered by the board, there are resources available.

Selection Board Member. Myths about the board and its selection process persist due to its "cloak of secrecy" on board membership, the perception of a quota system versus assessment standards, and a concern about lack of time to fairly assess each Soldier's file, according to Colonel Charles D. Allen, Director of Leader Development, Department of Command, Leadership and Management, US Army War College. He sat on the Command Sergeant Major/ Sergeant Major /Sergeant Major Course Selection Board in June 2007.

"Those concerns were far from the truth," Allen said. Leaders who have been asked to be board members should visit the US Army Human Resources Command website at https://www.hrc.army.mil/site/active/tagd/msdsecretariat/enlistedboards/enlistedboards.htm and read "A Board Information Guide." The guide outlines what the selection boards do and how the board members review Soldiers' files and vote on the list of Soldiers who are up for promotion.

"The Senior (Centralized) Enlisted Army Promotion System," which gives an overview of the system, is available at https://www.hrc.army.mil/site/active/select/SrProm.htm.

After visiting the websites, those who still have questions about Allen's experiences may contact Allen at charlesd.allen@us.army.mil.

NCOs. The most important document in an NCO's promotion file is the OMPF, and keeping it up to date is the NCO's responsibility, according to the Board Information Guide.

The guide offers information on how NCOs can prepare for promotions, and the same website offers other pertinent promotion preparation links.

Parting Thoughts from the Field Artillery CSM

By Command Sergeant Major William E. High Jr., FA

After having the distinct honor of being the Command Sergeant Major (CSM) of the Field Artillery (FA) for two and a half years and after 25 years in the Army, I am stepping into a newly created position—as part of the Coalition Military Assistance Transition Team (CMATT) in Iraq. My main focus will be helping to build the Iraqi Army, a way of reducing troop numbers so we can give the troops more dwell time at home.

Twenty-five years ago, I never dreamed I would be the Field Artillery CSM. Even after I was selected, it was not until I walked into my new office in 2005 that I realized the unique challenge I had, especially during a time of war.

As the Field Artillery CSM from 25 April 2005 to 18 December 2007, I have seen the Army, the Field Artillery and Artillerymen adapt to many changes—including modular transformation, the Base Realignment and Closure (BRAC) recommendations and the forming of the Fires Center of Excellence (CoE) at Fort Sill, Oklahoma—and, in the process, overcome many challenges. But there are *more* challenges ahead.

Challenges. Field Artillerymen are proud to be gunners—that's why we chose to be Artillerymen—but in the current fight, we've been assigned nonstandard missions that require us to adapt, acquire other skills and still attempt to maintain our core competencies.

Our Branch's biggest challenges in the past few years have been and are to provide trained mobile training teams (MTTs), along with systems and training, to meet our new missions to support the maneuver commander, while still keeping our core competencies.

Training. During my tenure, the Fires CoE has taken on these challenges to help in any way possible by providing this training so Artillery commanders in maneuver brigades can get their Artillerymen reset with certification programs when mission and time allow. (See "Reset—Rebuilding FA Core Competencies for Future Full-Spectrum Operations," by Lieutenant Colonel Loyd A. Gerber in March-April 2007 edition of *Field Artillery*, available online at sill-www.army.mil/famag/.)

In the area of ensuring core competencies, one of the accomplishments that I'm proud of as the Field Artillery CSM is the increased emphasis that was placed on the Master Gunner Division to train Master Gunner NCOs who in turn can train officers and Soldiers. Master Gunners are held responsible by their commanders and CSMs for building a certification program, which is critical to make sure that all Artillerymen are certified to fire weapons systems.

Communications. Another challenge that was evident to me while shutting down the 101st Division Artillery (Div Arty) was communications. With the Army's modular transformation, we lost the division artilleries and the oversight they provided to our Field Artillery battalions; so building and simplifying lines of communication became even more critical to provide each battalion command team, including the Master Gunner, with contacts to solve issues that arise in the field.

As part of solving that communication challenge, I am proud to have been a part of building the Redleg 7 Report. The report—developed from face-to-face feedback from officers, NCOs and Soldiers in the field on what they need information on—provides a conduit for feedback and helps to keep the leadership at Fort Sill current on the issues affecting the troops and the mission.

Adapting to the Fight. I am more proud than ever to be a Redleg simply because of the way our Redlegs have adapted to the current fight. We've proven that we're not only great Artillerymen, but truck drivers, Infantry, security forces and nation builders as well in the current fight. There is not a branch out there that can be retrained and perform so many "in-lieu-of" missions then fall back on a cannon or rocket system to perform fire support missions.

Parting Advice. Now and in the future, Army and Marine Field Artillerymen need to focus on standards and discipline, which are the basis of why Artillerymen can adapt to whatever mission we are given. Always remember that this is not the first time that the Field Artillery has performed so many types of missions and that one of our biggest challenges will be to maintain our core competencies in the counterinsurgency or COIN fight.

No matter what mission we undertake, we *are* Artillerymen. When we get the chance to get back to our core competencies, it is critical that we get retrained and recertified—because at the end of the day, we *have* to support and provide fires for the maneuver commander.

The Field Artillery already has proven and will continue to prove to the Army and maneuver commanders that we are the most disciplined and adaptable Branch in the Army's inventory.

Artillery Strong!

Editor's Note: *CSM High's retreat ceremony was held 18 December 2007 at Fort Sill, Oklahoma. At press time, no selection for the Field Artillery CSM position has been announced.*

Army Program Wins William J. Perry Award

The Precision Strike Association (PSA) awarded the 12th annual William J. Perry Award to Lockheed Martin's Guided Multiple-Launch Rocket System (GMLRS)/High Mobility Artillery Rocket System (HIMARS) Team and the US Army on 23 January in Arlington, Virginia. This is the first time an Army program has won this award.

The award recognizes leadership or technical achievement that results in significant contributions to the development, introduction or support of precision strike systems.

The award citation cited the GMLRS/HIMARS Team and the US Army for their "outstanding contributions by providing revolutionary surface-to-surface precision engagement capability to expeditionary ground combat commanders…The [GLMRS/HIMARS] Team exceeded expectations through development and fielding of expeditionary [HIMARS] possessing the revolutionary surface-to-surface precision engagement capability of the Guided Multiple-Launch Rocket."

Due to the commitment of the US Army and the Lockheed Martin Team, this precision capability is now in the arsenal of coalition commanders in the field. With more than 600 rockets fired in support of Coalition Forces and an overall reliability rate exceeding 98 percent, this system has made a significant contribution to operational success and has become a weapon system of choice for commanders, according to the award citation.

"GMLRS launched from either HIMARS or the M270A1 launcher provides the joint commander with a persistent, responsive, all-weather, long-range, precision, surface-to-surface fires capability," said Colonel Gary S. Kinne, Training and Doctrine Command Capability Manager, Rockets and Missiles at Fort Sill, Oklahoma.

Kinne said that the GMLRS is used in Afghanistan and Iraq against high value targets, many of which are structures located in urban environments.

Kinne said that the system has revolutionized the Artillery in the urban fight because rockets can now be fired up to 70 kilometers with pinpoint accuracy while absolutely minimizing collateral damage. Soldiers and Marines sometimes call GMLRS the "70 kilometer sniper rifle." In addition, the rocket can now be fired in close support of friendly forces—once the domain of cannon artillery.

"Guided MLRS has put the Field Artillery back in the urban fight—the predominant fight and threat today and with precision," Kinne said.

Marines from F Battery, 2nd Battalion, 14th Marines, fire a Guided Multiple-Launch Rocket System from a High-Mobility Artillery Rocket System in Iraq. (Photo by Sgt Andrew D. Pendracki, USMC)

Fires COMMANDS

Captains—Your *New* Forum

Take pride in your significant accomplishments in support of the War on Terrorism as a commander.

The Fires community wants to read about your experiences. Send the Fires Bulletin a 300-word or less article describing your lessons learned, any esprit de corps incidents or challenges that you and your unit overcame.

Suggested Topics. Some questions you can address are:

1. What changes to school curricula would have better prepared you for your command?

2. What has been your biggest challenge? How did you overcome it? What would have made that task easier?

3. What is the most important piece of advice you would give to your replacement?

4. Who (and his duty position and unit) has been the biggest source of support for you during this command? How and why?

5. Hindsight being 20-20, what do you wish you knew when your boots hit the ground as a commander?

Submissions. Include your full name, full unit name, where the unit is, and (or) where the unit is or was deployed during your command. It is important you include your email address and phone numbers.

Run your article and photos through your S2 for operational security (OPSEC) clearance and indicate in your email that this was done.

Include clear, crisp 1 MB or larger photos showing you or your unit in action. Do not use "Hi Mom" or posed photos with your article.

Include a few sentences describing each photograph: who is in it (full name, rank and unit); what is going on; when and where the photo was taken; and the full name, rank and unit of the photographer.

Put "Fires Commands" in the email subject line. Send your submission by email to the *Fires* Bulletin at firesbulletin@conus.army.mil.

A Brief History of the FA and ADA

By Dr. Boyd L. Dastrup

Through the years, the Field Artillery (FA) and the Air Defense Artillery (ADA) have shared a close association, dating back to the birth of the Continental Army's Artillery on 17 November 1775. During the early years of the country's history, the Coast Artillery (ADA's ancestor) and the FA composed the War Department's Artillery forces. While the Coast Artillery defended the country's harbors from enemy naval attack, the FA provided fire support on the battlefield.

With the rise of airpower in the early 20th century, the Army created Antiaircraft Artillery (AAA) as a component of the Coast Artillery to defend ground forces from air attacks. The advent of modern naval guns and aircraft in the 20th century, meanwhile, rendered coastal fortifications armed with heavy Coast Artillery obsolete. The need to modernize the Army's force structure and the out-of-date coastal fortifications ultimately led to the Army Reorganization Act of 1950 that inactivated the Coast Artillery and merged the FA and AAA into one Artillery branch. This lasted until 1968 when the Army separated the two. For almost four decades, the two Artilleries "went their own ways" until 2005 when Congress approved the Base Realignment and Closure (BRAC) Commission's recommendation to collocate the FA and ADA schools at Fort Sill, Oklahoma.

Defending the Frontier. From 1775 to 1907, the regimental system governed the country's Artillery organization. In June 1775, the Continental Congress created the Continental Army from provincial regiments in Boston, voted to raise additional units for the Army and eventually formed the existing Artillery units around Boston into a composite Artillery regiment of Foot (a branch of FA where the cannoneers walked beside the draft animals pulling the cannon), Siege Artillery and Garrison Artillery under General Henry Knox.

Following the Colonies' disastrous defeats in New York in 1776, the Continental Congress reorganized the Continental Army providing for 88 infantry battalions and five Artillery battalions—also called regiments. However, only four regiments were created, and they consisted of Foot Artillery, Siege Artillery and Garrison Artillery. Such composite regiments forced Artillerymen to serve on all three kinds of artillery to provide flexibility in assigning officers and Soldiers.[1]

During the next three decades, Congress repeatedly restructured the Army and its Artillery to keep them in harmony with national security requirements. In the spring of 1785, the standing Army consisted of the First Regiment of eight infantry companies and two Artillery companies to guard the frontier. Two years later, Congress permitted Secretary of War Henry Knox to organize the Artillery as a separate battalion to give the Army one infantry regiment and one Artillery battalion with Artillerymen serving primarily as infantry on the northwest frontier.

As the tensions with Native Americans increased on the northwest frontier and with Great Britain over its failure to cede forts to the United States that it had promised to evacuate after the American Revolution, the Army's size grew. Following the disastrous defeats of Josiah Harmer's column in 1790 and Arthur St. Clair's column in 1791—both at the hands of Native Americans in the Ohio River Valley—Congress created the Legion of the United States in 1792 with an organic battalion of Foot Artillery.

Under Major General "Mad" Anthony Wayne, the legion decisively defeated Native Americans at Fallen Timbers in the Ohio River Valley in August 1794. Although the legion had small 3-inch howitzers, the broken terrain covered with fallen trees prevented their effective employment.

Artillery of the day, including the small 3-inch howitzers, was simply too heavy and cumbersome to drag along when campaigning against Native Americans on the trackless frontier. As a result, the Artillery on the frontier existed in name only; Artillerymen functioned mainly as infantry when posted to frontier forts, losing their skills to serve on cannons.[2]

Defending the Frontier and the Coast. With a war looming with Great Britain in 1794 and France in 1798, Congress reorganized the Artillery. Besides funding earthen and masonry redoubts along the Atlantic Ocean, a

Congressional act of 1794 created the Corps of Artillery and Engineers that absorbed the existing Artillery battalion from the Legion of the United States and authorized the president to employ the corps on the frontier or the coast as he saw fit, compelling Artillerymen to serve in either Foot or Coast Artillery units as generic Artillerymen and not as specialists.

Later in 1798, the prospect of war with France prompted Congress to create a regiment of Artillery and engineers to augment the corps to give the Army two Artillery units. As with the Corps of Artillery, the newly formed regiment's Artillerymen had to be Coast Artillerymen and Field Artillerymen, but they served primarily in coastal fortifications which were seen as the greatest security requirement.

When the threat of war disappeared, President Thomas Jefferson and Congress separated the Artillerists from the engineers. They created the Corps of Engineers and decreased the number of Artillery regiments from two to one in 1802 with the Artillery's primary responsibility revolving around defending the Atlantic Coast.[3]

During the defense of Antwerp near the end of World War II (see article on Page 42), 90-mm guns of the Antiaircraft Artillery prepared to augment the Field Artillery with indirect fire against advancing German ground units. (Photo courtesy of the Air Defense Artillery Museum, Fort Bliss, Texas)

Imitating the successes of the Europeans with Horse Artillery, a branch of FA where the cannoneers rode on horses to give more mobility than Foot Artillery, the Americans subsequently organized the Light (Horse) Artillery Regiment in 1808. Although this action recognized the distinct differences in missions between Light Artillery and Coast Artillery, provided for training and equipping the regiment's batteries and intended to end the practice of rotating officers and Soldiers between Coast and Light Artillery units, it accomplished little.

A parsimonious Congress failed to provide the funds to equip the regiment as Light Artillery except for one battery formed under Captain George Peter. At the Fourth of July celebration in Washington DC in 1808, Peter's battery demonstrated its ability to maneuver and fire its weapons and impressed Congress and onlookers. Because feeding the horses was too expensive, Secretary of War William Eustis, however, dismounted the battery, sold the horses and issued muskets to the cannoneers for duty as infantry on the frontier.[4]

Although the Light Artillery Regiment remained on the books and served with mixed results in the War of 1812, the Reorganization Act of March 1815 recognized its utility. The act created the Corps of Artillery by merging the 1st, 2nd and 3rd Artillery Regiments, formed to defend the coasts, and retained the Light Artillery Regiment with the intention of properly equipping it. In its haste to reduce the wartime Army to a peacetime size and conserve money, Congress permitted the regiment to disappear except on paper.[5]

Forming the Corps of Artillery. Additional restructuring followed within a few years. The Reorganization Act of 1821 consolidated the Corps of Artillery, the Light Artillery Regiment and the Ordnance Department into the Corps of Artillery of four regiments of nine companies each. Of the nine companies, eight were Coast Artillery, and one was designated as Light Artillery. By combining the Ordnance Department, the Corps of Artillery and the Light Artillery Regiment into one organization and creating four composite regiments as a cost-saving measure, the act effectively legislated the first and only Light Artillery Regiment out of existence, even though it authorized Light Artillery batteries and threatened Artillerists with duty in any kind of Artillery unit.

Without an urgent requirement for trained Light Artillerymen, the War Department allowed the Light Artillery batteries to languish until 1838 when Captain Samuel Ringgold assumed command of the first Horse Artillery battery. The following year, the other Light Artillery batteries received their horses, but they were organized as Mounted Artillery (a branch of FA) where the cannon crew rode on the limbers and caissons because it was less expensive than Horse Artillery.[6]

Reorganizing after the Civil War. Although FA performed well in the Mexican War of 1846-1848 and the American Civil War of 1861-1865, Congress established the peacetime Artillery organization at five regiments of 12 batteries each in 1866. Two of a regiment's batteries were FA, and the rest were Coast Artillery. While Coast Artillery batteries stood as the guardians of American harbors against enemy naval attack, the field batteries were scattered on remote posts in the Trans-Mississippi West. With the exception of Major General Nelson A. Miles, most commanders believed that FA hampered mobility and had limited use against Native Americans who relied upon hit-and-run tactics and mobility for survival. As a result, Field Artillerymen frequently were pressed into service as infantry and cavalry and, with a few exceptions, served on a gun, permitting perishable skills to deteriorate.[7]

By dictating officer assignments, the regimental organization also adversely influenced Field Artillerymen. Because of the heterogeneous regiments created after the Civil War and economy measures, the War Department continued the prewar practice of rotating officers and Soldiers between Coast and FA batteries obliterating differences between the two Artilleries and further eroding skills. Not even the School of Application for Cavalry and Light Artillery that opened in 1892 at Fort Riley, Kansas, to train FA officers and units could offset the pernicious rotation policy that created a generic Artilleryman. Personnel shortages and detached service for units, taking them away from training at the school for other more pressing duties further prevented effective training.[8]

Along with indirect fire that was beginning to replace direct fire, the Spanish-American War of 1898 highlighted the Army's dependence upon obsolete field guns and inadequately trained gun

crews. In view of such circumstances, Congress passed the Reorganization Act of 1901. Among other things, the act created a Chief of Artillery to oversee all of the Artilleries' activities. The act also abolished the regimental system for the Artillery and replaced it with an Artillery Corps of 126 companies of Coast Artillery and 30 batteries of FA, recognizing the difference in missions between the two. Yet, the act failed to abolish the long-standing practice of rotating officers.

Preserving such a custom hampered the creation of competent officers for either branch. This particularly was true of FA officers and Soldiers because the Artillery School at Fortress Monroe, Virginia, focused on Coast Artillery training and closed down its meager FA training in 1906. The Mounted Service School at Fort Riley that opened in 1907 to "pick up the slack" never lived up to the War Department's expectations. Concentrating on equitation, the school failed to train Field Artillerymen how to maneuver their guns around the battlefield.[9]

Separating the Coast and Field Artilleries. The dearth of qualified officers and Soldiers created by the rotation policy and the lack of appropriate training prompted successive Chiefs of Artillery during the first decade of the 1900s to campaign for the complete separation of the two Artilleries and specialized training for each. Convinced by this logic, Congress passed an act on 25 January 1907 that created two distinct Artillery branches—the Coast Artillery and the Field Artillery.

Equally important, the act ended the destructive practice of rotating officers between the two Artillery branches and promoted specialization. It also paved the way for reorganizing the Artillery School at Fort Monroe as the Coast Artillery School in 1907 for training only Coast Artillerymen and the founding of the School of Fire for Field Artillery, the forerunner of the Field Artillery School, at Fort Sill in 1911.[10]

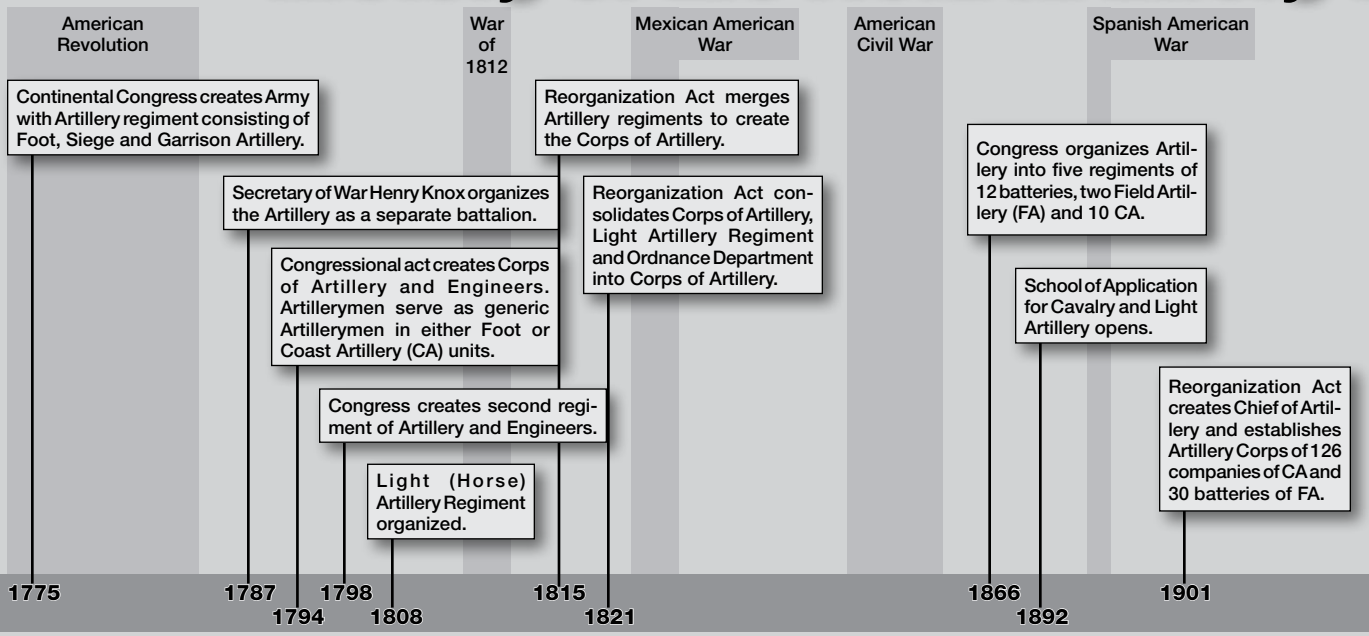
Although both branches performed effectively in World War I, the War Department convened a board of officers in April 1919 under Major General Joseph T. Dickman to determine Coast and Field Artillery missions in light of wartime experiences. The Dickman Board believed that the introduction of motor vehicles had given even the heaviest Artillery pieces, such as Coast Artillery, unprecedented mobility to erase the most significant difference between the two branches. As such, the board concluded that Coast Artillery should be a naval function and that heavy, mobile Artillery for supporting the field army should be an FA function. This proposal stripped the Coast Artillery of its historical harbor defense mission by giving it to the Navy.[11]

In his annual report to the Chief of Staff in October 1919, the Chief of Coast Artillery, Major General Frank W. Coe, urged the War Department to reconsider his branch's mission. According to Coe, the day was over when the Coast Artillery should be thought in terms of only maintaining platform-mounted heavy Artillery and mine defenses for harbor defense.

Recognizing that modern naval guns had rendered coastal fortifications obsolete, that tractor-drawn and railway-mounted Coast Artillery guns had performed well during the war as FA to attack strong fortifications, and that thousands of Coast Artillerymen had served in field batteries, Coe suggested merging the two Artilleries. The lack of mobility for heavy Artillery, one of the primary reasons for the separation in 1907, no longer existed, while Coast Artillerymen functioned competently as Field Artillerymen during the war. Together, they blurred the distinction between the two Artilleries and justified merging them.[12]

The debate over the future of the Coast Artillery continued. In 1920 Congress passed the National Defense Act to settle the merger debate. The new law retained the Coast Artillery and the FA as separate branches even though the motor vehicle gave unprecedented mobility to the former to fight on the modern battlefield, defined their missions and preserved the Chief of Coast Artillery and the Chief of FA to supervise their respective branches. Notwithstanding this congressional legislation, the possibility of merging the two arose again in 1927 as an economy

History of the Field Artillery and



measure prompting the War Department to issue General Order 22 to define missions for both Artilleries.

The FA supported the other combat arms on the mobile battlefield and included pack, division and corps Artillery with the exception of AAA, and general headquarters Artillery with the exception of AAA and railway Artillery. The Coast Artillery defended the harbors and received the AAA mission. In 1939, an economy drive by the War Department prompted examining the integration of the Artilleries once again. When a staff study revealed that such a measure would produce only minor savings, the War Department dropped the matter for the duration of World War II.[13]

Consolidating Artillery Training. Within months after the end of World War II, Chief of Staff of the Army, General George C. Marshall, appointed a board of officers under Lieutenant General Alexander M. Patch to make proposals to streamline organization and save money. After careful study, the Patch Board recommended combining the Coast Artillery with its AAA mission and the FA to form one Artillery.

Although the Coast Artillery's irrelevance in the face of modern naval guns and aircraft undoubtedly influenced the recommendation, other reasons played prominent roles. The fear of losing AAA to the Army Air Force, that was pushing for independence from the Army, and budget and personnel reductions after the war also drove the recommendation. Budget and personnel reductions demanded finding ways to conserve and use resources wisely. In view of this, the War Department urged Congress in 1946 to consolidate the Coast Artillery and the FA as one Artillery branch.[14]

Before Congress could act, the Army combined what it legally could to reduce overhead. Effective 1 November 1946, the War Department redesignated the Field Artillery School as The Artillery School with the Antiaircraft Artillery School at Fort Bliss, Texas, and Sea Coast Artillery School at Fort Winfield Scott, California, as branches of The Artillery School with each staying at its existing location.

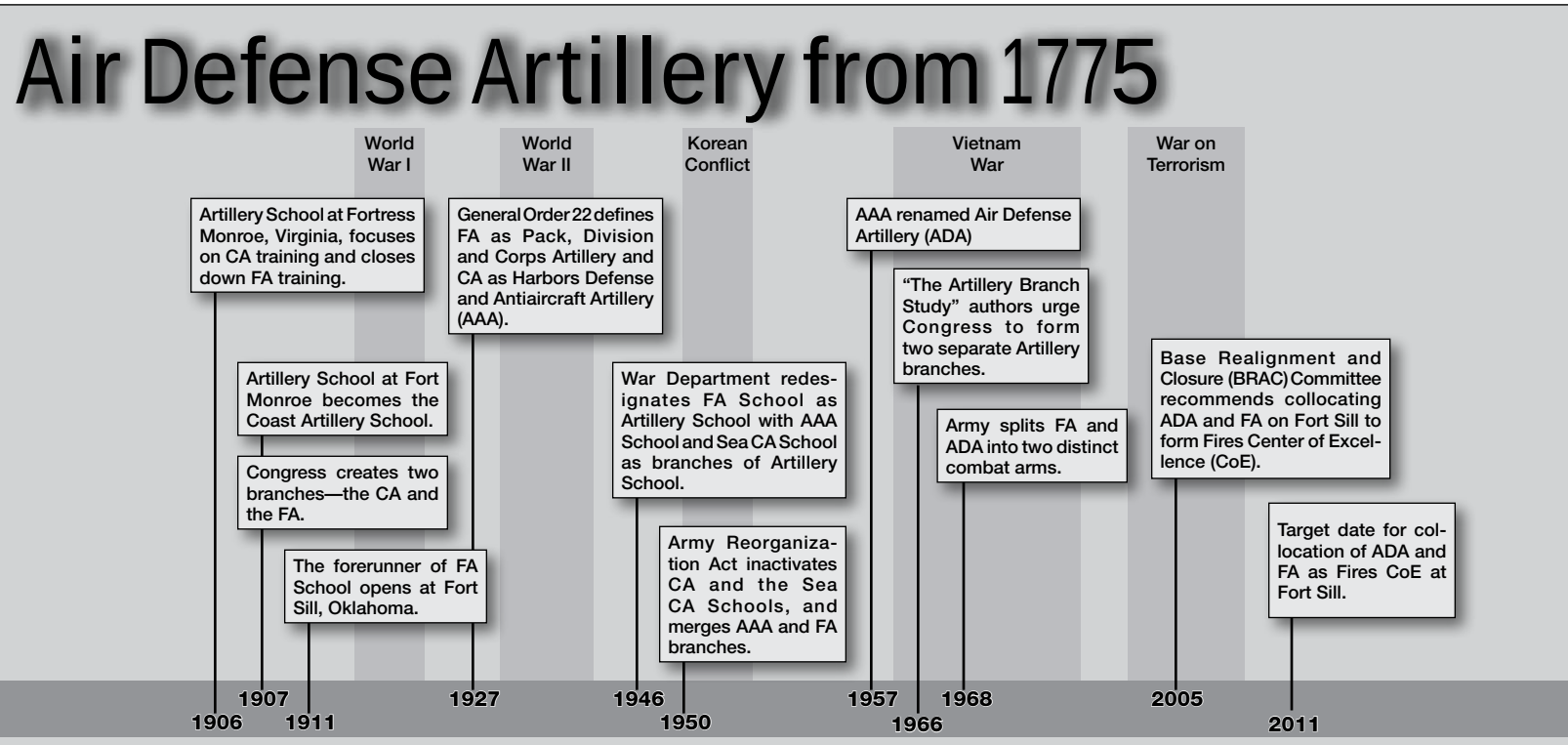
In keeping with the need to economize with the attending requirement for personnel flexibility, the three schools created a basic integrated course for all newly commissioned officers where they would learn the fundamentals of the three Artilleries by moving from school to school.

The schools also developed an integrated advance course for officers with three to 10 years of experience for additional training on all three Artilleries. Like the lieutenants, captains would move from school to school for training. Instituted in 1946-1947, cross training, or integrated training as it was called, permitted moving officers from branch to branch (called cross assigning) to husband scarce personnel resources, deemphasized specialized training and created a generic Artillery officer with limited skills in any branch.

Ironically, this consolidation of training, the revival of rotating officers between the Artilleries and training on all the Artillery systems came at the precise time when technology was becoming more sophisticated and required even more specialized training than in the past.[15]

Inactivating Coast Artillery, Merging AAA and FA. Three years later, Congress picked up where the Army had left off in 1946-1947 when it passed the Army Reorganization Act of 1950 that legally recognized the Infantry, Armor and Artillery as statutory combat arms, among other things. The Army inactivated the Coast Artillery and the Sea Coast Artillery Schools, legally merged AAA and FA as one branch to economize, and solidified the practice of integrated training and cross assigning for officers while preserving specialized training for enlisted personnel as either Field Artillerymen or Antiaircraft Artillerymen.[16]

Although much heralded, the merger produced mixed results. It saved money, allowed moving officers easily between the AAA (renamed Air Defense Artillery in 1957) and the FA, and produced a generic Artillery officer. Because of the growing complexity of FA and AAA equipment and weapons, the differing employment techniques and the



failure of integrated training to provide adequate preparation for an officer to serve in either Artillery effectively, the Continental Army Command took action.

Believing that the Army no longer could train all Artillery officers in both FA and AAA tactics, techniques, and procedures and that officers should be either FA or AAA (especially second and first lieutenants), the Continental Army Command restructured officer training.

With support from the Army's Assistant Chief of Staff for Training, the Continental Army Command created separate basic courses for the two Artilleries in 1957 and moved all surface-to-surface rocket and missile courses and systems to Fort Sill. In the meantime, the Continental Army Command retained the integrated Artillery advance course for officers with five to eight years of experience because of pressure to maintain flexibility in officer assignments and the shortage of career officers.[17]

Providing Specialized Officer Training. In the 1960s, the drive to abolish integrated training and cross assigning and to separate the two Artilleries mounted. Based on the Army Officer Education and Review Board of 1958, the Continental Army Command reintroduced separate basic officer courses in 1962. The courses provided specialized training for new officers that they were not receiving with the integrated course that had been brought back late in the 1950s to reduce training costs and to create assignment flexibility.

Meanwhile, the need for flexibility in assignments to offset career officer shortages caused the Continental Army Command to retain the integrated officer advance course for officers with five to eight years of experience. A student thesis written at the Army War College by Colonel William F. Brand challenged the wisdom of this. He argued that integrated training provided inadequate training in either branch. As a result, officers left the integrated advance course without mastering any of the weapons and without any real tactical expertise in either branch. In view of this, Brand urged separate training for each branch.

Dividing FA and ADA into Two Branches. At the direction of the Continental Army Command, the US Army Artillery and Missile School and the ADA School explored the desirability of dividing the Artillery into two branches. In 1963 they recommended separation because of the difficulty of furnishing integrated training, the continued production of inadequately trained officers and the growing technological and tactical differences between the two Artilleries.[18] Expressing concern about integrated training, the authors of "The Artillery Branch Study" of 1966 wrote that it "spawned mediocrity."[19]

The demand for competent FA officers for duty in Vietnam in 1965-1966 finally caused the Army and the Continental Army Command to reorganize the Artillery. Because the one-year tour of duty left little time for on-the-job training, combat in Vietnam required the officer to arrive as a proficient Field Artilleryman not a hybrid FA and ADA officer. In view of this, "The Artillery Branch Study" urged abandoning integrated training and forming two separate Artilleries.[20]

...the lessons of the past had been learned. Although the collocation of the two branches and schools would generate monetary savings and provide other benefits, the BRAC process retained the FA and the ADA as separate branches to retain their integrity.

Concurring, the Army split the FA and ADA into two distinct combat arms with their own training programs in 1968. This freed officers to concentrate on becoming experts in their respective branches. Yet, separating the two Artilleries had little impact on the US Army Artillery and Missile School, renamed the Field Artillery School in 1969, and the ADA School because they were already focusing their energies on their areas of expertise.[21]

By separating the two Artilleries, the Army reaffirmed the folly of the 1946-1968 merger and the wisdom of forming two distinct branches in 1907. When both Artillery branches were together in the 1800s as part of a composite Artillery regiment and 1946-1968 as one Artillery branch, mediocrity reigned, especially for officers. Officers simply did not have the time to master the intricate skills of both branches.

Although the FA and the ADA remained separate entities during the next 37 years, national security concerns changed that relationship. Between 1988 and 1995, the BRAC process closed 112 Army installations and realigned 26 others to create more efficiency and effectiveness within the Army's installation infrastructure. In view of this achievement, three successive Secretaries of Defense urged additional BRAC actions to save billions of dollars annually, free up excess capacity, permit funding facilities that actually were required, support warfighting and furnish quality of life improvements for the military services. Yet, the secretaries found little Congressional support.[22]

In the FY02 National Defense Authorization Act, Congress finally permitted a BRAC to be conducted in FY05. As Secretary of Defense Donald H. Rumsfeld explained in November 2002, BRAC 2005 would permit reconfiguring the Department of Defense's infrastructure to maximize warfighting capability and efficiency. It also would create multimission and multiservice installations, optimize military readiness and help create significant monetary savings.[23]

Creating the Fires Center of Excellence. As anticipated, BRAC 2005 produced significant changes with the FA and the ADA. To save money and improve warfighting capabilities, BRAC 2005 recommended relocating the ADA Center and School from Fort Bliss to Fort Sill and consolidating it with the FA Center and School to form the Net Fires Center, later renamed the Fires Center of Excellence (CoE).

This would consolidate FA and ADA training and doctrine development at a single location and functionally align related branch centers and schools at one location to foster consistency, standardization and training proficiency. Creating the Fires CoE also would allow the Army to reduce the number of military occupational specialties (MOS) training locations and support Army transformation by collocating institutional training and would be accomplished by 2011. Yet, collocating at Fort Sill did not mean merging the branches and reviving integrated training and cross assigning officers. The branches would remain separate.[24]

As such, the lessons of the past had been learned. Although the collocation of the two branches and schools would generate monetary savings and provide other benefits, the BRAC process retained the FA and the ADA as separate branches to retain their integrity. Artillery Soldiers would serve in the Air Defense Artillery or Field Artillery, not both.

Dr. Boyd L. Dastrup is the Command Historian for the US Army Fires Center of Excellence and Fort Sill. He has written *The U.S. Army Command and General Staff College: A Centennial History*; *Crusade in Nuremberg: Military Occupation, 1945-1949; King of Battle: A Branch History of the U.S. Army's Field Artillery; Modernizing the King of Battle: 1973-1991; The Field Artillery: History and Sourcebook;* and *Operation Desert Storm and Beyond: Modernizing the Field Artillery in the 1990s*. He also has written articles in *A Guide to the Sources of United States Military History*, *The Oxford Companion to American Military History*, *The U.S. Army in World War II,* and *Professional Military Education in the United States: A Historical Dictionary* and served as a subject matter expert for the History Channel on "Dangerous Missions: Forward Observation" (2001) and the Military History Channel in "Artillery Strikes" (2005) and "Weaponology: Artillery" (2006). He has a Ph.D. in US Military and Diplomatic History from Kansas State University in 1980.

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PIM: The Next Generation Paladin

By Major Corey B. Chassé, FA

The Internal Research and Development (IRAD) Paladin is a BAE Systems concept of the Paladin Integrated Management's (PIM's) self-propelled howitzer. (Photo courtesy of BAE Systems)

The venerable Paladin M109A6 self-propelled howitzer and the M992A2 Field Artillery Ammunition Supply Vehicle (FAASV) are being upgraded. These vehicles are being transformed into the M109 Paladin Integrated Management (PIM), also known as the M109 Family of Vehicles (FOV), by the Training and Doctrine (TRADOC) Capabilities Manager, Cannon (TCM-Cannon) at Fort Sill, Oklahoma, Product Manager Fires Support Platforms (PM-FSP) and BAE Systems. All the FOV will be rebaselined to have a common chassis.

The PIM program is a sustainment program engineered to improve readiness, avoid components' obsolescence and increase sustainability of the platforms out to the year 2060. The upgrades will allow the PIM to fire Excalibur (XM982) rounds and fuzes such as the precision guidance kit (PGK).

Operationally, the PIM will be faster, more maneuverable, more easily sustained and more lethal, but sustainment is the number one reason for PIM.

Sustainment Program. The sustainment program will allow maintainability and sustainability of the PIM through commonality with the Future Combat Systems (FCS) Non-Line-of-Sight Cannon (NLOS-C) and the heavy brigade combat team's (HBCT's) Bradley fighting vehicle. PIM will leverage fleet commonality for key components including the Bradley engine-trans-final drives-suspension and the FCS NLOS-C Rammer. See Figure 1 for the PIM's key components and aspects and Figure 2 for PIM modifications to the Paladin.

PIM will ensure the Paladin fire support platform continues to meet the needs of the Army's HBCT maneuver commander by improving fires support response and increasing the mobility of the fires support platform.

The PIM uses the existing main armament, recently designed cab structure, transparent armored gun shield (TAGS), and belly plate and side armor improvements, increasing crew survivability, while replacing outmoded chassis components with advanced components from the Bradley fighting vehicle to increase sustainability and commonality across the HBCT.

It also incorporates select technologies from the NLOS-C, including an automated (modified electric) projectile rammer and modern electric-gun drive systems to replace the current hydraulically operated elevation and azimuth drives that were designed in the early 1960s. The M109 FOV platforms (Paladin, FAASV and Paladin Operation Command Vehicle or POCV) will be fitted with Blue Force Tracker capability to ensure compatibility with future architectures. These upgrades along with better communication technology will improve operational awareness significantly on the battlefield and will reduce the logistics footprint within the HBCT.

The new electric-gun drives and rammer components, as well as a microclimate air conditioning system, will be powered by the Common Modular Power System (CMPS). CMPS, which will be also installed on Stryker and has been installed on high-mobility, multipurpose wheeled vehicle (HMMWV) demonstrator vehicles, is based on architecture jointly developed by the Army Tank-Automotive Research Development and Engineering Center (TARDEC) and the Program Executive Office-Ground

- Creates commonality with heavy brigade combat team's (HBCT's) Bradley platforms and reduces logistics footprint.
- Improves survivability and allows growth potential.
- M109 Family of Vehicles (FOV) Paladin projectile stowage increases:
  - Forward Vertical (Under the Weapon): 2
  - Hull Extension "Ready Racks": 10
  - Rear Vertical (Hull Extension): 8
  - Right Side Sponson: 7
  - Left Side Sponson: 10
  - Cab "Ready Rack": 6
- M109 FOV Field Artillery Ammunition Supply Vehicle (FAASV) projectile stowage increases:
  - Forward Projectile Racks: 90
  - Vertical Rack on Left Side Sponson: 5
- Improves mobility to keep pace with maneuver forces.
- Sustains the M109 PIM FOV out to the year 2060.
- Architecture supports future modernization.

Figure1: Key PIM Components and Aspects

Combat Systems (PEO-GCS).

Goals. A total of 600 PIM sets (Paladin and FAASV) are slated for upgrade. A ready-for-testing prototype will be released in 2009 with the first unit equipped (FUE) projected for 2012.

A mix of current Paladin and FAASVs will continue to be in the fleet along with the M109 FOV sets. This mix will be balanced by the National Level Recap program designed to maintain the current fleet through 2020, after which it is expected that the current fleet will be totally replaced by the M109 FOV.

Providing the best value for Soldiers in conjunction with a low-risk solution that ensures the Paladin and FAASV platforms remain ready for the fight today and tomorrow are the goals of the partnership between the Army's Project Manager-HBCT, Anniston Army Depot, Alabama, and BAE Systems, York, Pennsylvania.

Once delivered to the field, the PIM M109 FOVs will give HBCT commanders upgraded capabilities including more maneuverability, higher rate of speed, increased crew survivability and delivery of accurate and timely fires where and when needed. In addition, the upgraded Paladins and FAASVs will be sustainable, allowing commanders to have more confidence in and depend more on their fleet.

Major Corey B. Chassé, Field Artillery (FA), is the Chief of Current Cannons for Training and Doctrine (TRADOC) Capability Manager, Cannon (TCM-Cannon) at Fort Sill, Oklahoma. Major Chassé is a prior enlisted Marine and now serves as an active duty Title 10 National Guard Soldier. In the Army he has served as the Excalibur Action Officer for TRADOC Systems Manager, Cannon (TSM Cannon) in 1st Battalion, 30th Field Artillery (1-30 FA), at Fort Sill. In the New Jersey Army National Guard, he served as the Operations Officer (Asst. S3) for Headquarters and Headquarters Battery (HHB) 3-112 FA; Commander Battery B, 3-112 FA; and Battalion FSO for Det-1, HHB 3-112 FA, among other assignments.

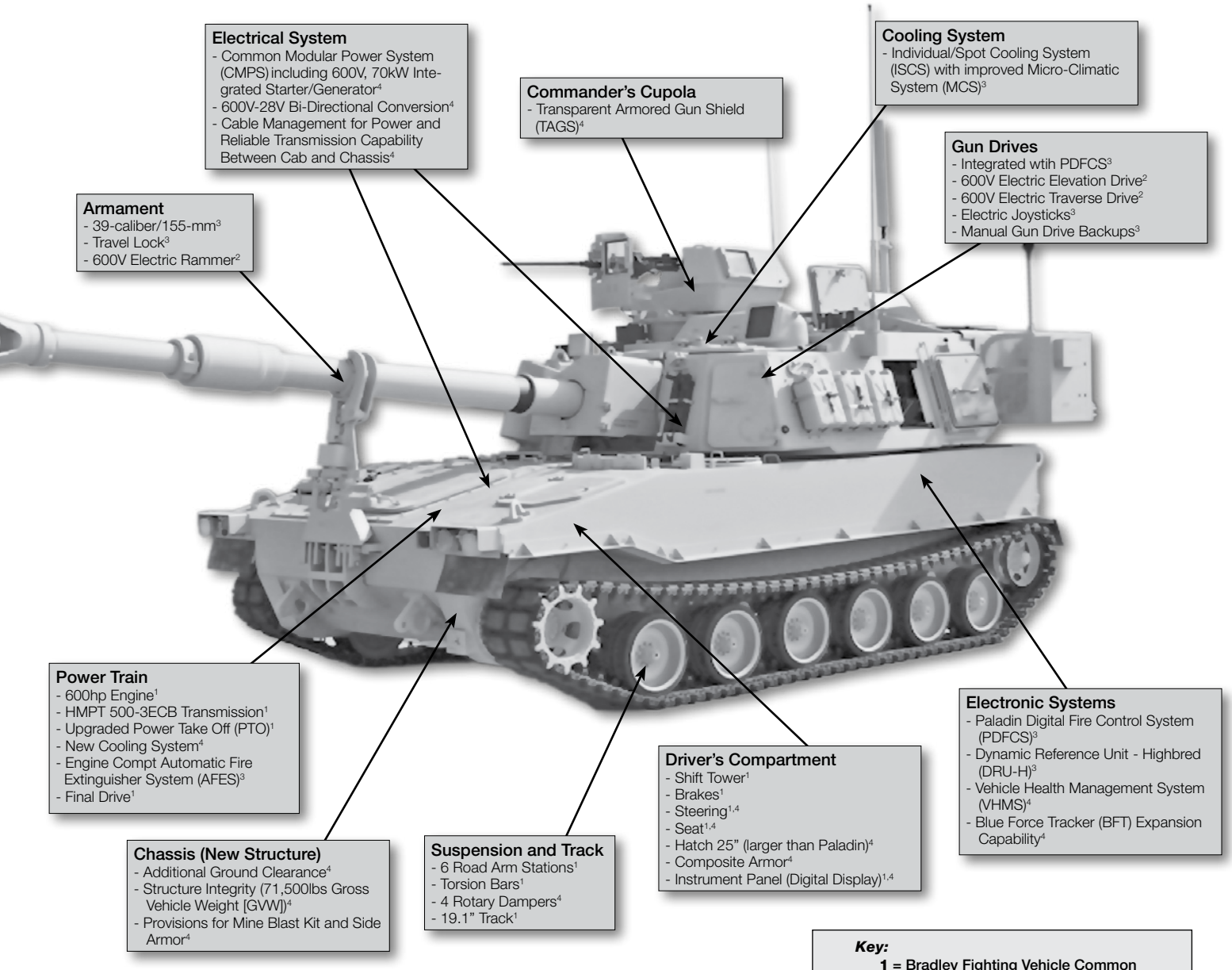


Figure 2: PIM Systems

Organize for Intelligence: Company Intelligence Cells in COIN

By First Lieutenant Rory M. McGovern, FA

In the fall of 2006, while preparing to deploy in support of Operation Iraqi Freedom (OIF) 06-08 as a company fire support officer (FSO) with E Company, 2nd Battalion, 5th Cavalry (E/2-5 Cav), 1st Brigade Combat Team (BCT), 1st Cavalry Division, I was told to read an article. It was "Twenty Eight Articles: Fundamentals of Company-Level Counterinsurgency" by Dr. David Kilcullen. Then, I designed a proposal for a company intelligence cell for the unit's upcoming deployment.

In organizing and implementing the cell in combat, I became convinced of the necessity of company-level intelligence cells in counterinsurgency (COIN) operations and the pivotal role fire supporters should play in the effort.

In his article, Kilcullen wrote, "In counterinsurgency, killing the enemy is easy. Finding him is often nearly impossible. Intelligence and operations are complementary. Your operations will be intelligence driven, but intelligence will come mostly from your own operations, not as a 'product' prepared and served up by higher headquarters. So you must organize for intelligence." I believe Kilcullen is correct.

In today's COIN environment, planned lethal operations demand precision and cannot succeed unless built solidly upon good intelligence. Nonlethal operations and routine patrols are not only geared toward earning the respect of the population or reconciling the reconcilable, but also are means to collect and develop the intelligence requisite to launching lethal operations to defeat the irreconcilable. It stands to reason that companies expected to plan and execute their own COIN operations within given areas of operations (AOs) must implement mechanisms to collect, analyze and produce their own intelligence.

Fire Support Team (FIST) Solution. This implementation presents a unique challenge to commanders. More military intelligence Soldiers are needed to support companies within tactical battalions. Further, the need for enough "boots on the ground" to maintain effective coverage of and presence in a company AO makes it unlikely that a company commander could pull enough personnel away from line platoons to maintain a robust company intelligence cell. The solution to this dilemma lies in the company fire support team (FIST).

It is the company FIST's versatility that makes it ideal to form the foundation of a company intelligence cell. In the COIN operations currently underway in Iraq and in addition to their traditional fire support tasks, FSOs and fire support NCOs (FSNCOs) are expected to assume responsibility at the company level for any or all of the following: targeting, air-ground integration, information operations, civil-military operations, psychological operations, employing enablers, public affairs and other functions. Effectively, company FSOs and FSNCOs in a COIN environment are fusion cells unto themselves. That being the case, it is not at all a stretch for the FSO or FSNCO to assume the intelligence role within the company.

More importantly, the additional duties already thrust upon fire supporters in COIN missions inherently are complementary to intelligence. A fire supporter's execution of these duties in support of his company, particularly targeting and employing enablers, is improved greatly by intimate involvement with the intelligence process in his company's AO. Likewise, the fire supporter's already in-depth involvement in the targeting cycle within his company provides him with a broad perspective and understanding of the "bigger picture" within the company's AO. Such perspective and understanding at the hub of a company intelligence cell maximizes the output of the entire cell.

The concept for a company intelligence cell to support E/2-5 Cav was based on this reasoning, and it was a living and breathing adaptation of the commander's intent. It then was altered and adapted during execution according to operational realities that were unforeseen or unconsidered during the planning stage.

This article, drawn from experiences and lessons learned in the implementation of a company intelligence cell in combat, is a recommendation on the organization and implementation of a FIST-centered company intelligence cell.

Organization. The company intelligence cell should be a combination of operations and effects, drawing upon the FIST and elements of the headquarters platoon to build the cell. For E/2-5 Cav's intelligence cell, the FSO was the officer in charge (OIC), and the FSNCO was the NCOIC. Four headquarters platoon Soldiers became radio-telephone operators, and the FIST provided the remaining Soldiers (see Figure 1).

In the original concept, the headquarters platoon sergeant was slotted as the intelligence cell NCOIC. This turned out to be impractical due to the volume of his duties and responsibilities. In addition, his duties kept him in the command post (CP) keeping him from developing the fundamental advantage of a company intelligence cell—a unique analytical perspective gained through intimate knowledge of the AO and familiarity with the people in it.

The FSNCO's normal duties take him outside the wire with the FSO, allowing him to develop that advantageous perspective upon which to base analysis, making him a better choice to serve as the NCOIC of the company intelligence cell.

In retrospect, E/205 Cav's intelligence cell could have been better if platoon representatives had been included. In an Infantry company, this could be accomplished within the FIST by making those forward observers assigned to specific platoons serve as their platoons' representatives to the intelligence cell. In other companies, the representatives would have to come directly from the line platoons.

These representatives could perform the FIST's intelligence tasks on individual platoon missions and could participate in the analysis process. Bringing representatives from line platoons into the process also could improve the relationship between the intelligence cell and the platoons, making the platoons not only consumers of the intelligence cell's products and output, but producers as well.

There is more to organizing the intelligence cell than just assigning people

1LT Rory McGovern, E Company, 2nd Squadron, 5th Cavalry Regiment (E/2-5), Fire Support Officer, left, and an interpreter, center, conduct tactical questioning near Abu Ghraib in April 2007. (Photo by CPT Lawrence Obst, E/2-5 CAV)

to build it. The intelligence cell must be organized in such a way that it can meet its requirements efficiently. In establishing these requirements, it must be noted that the need for a company intelligence cell in no way negates the need for intelligence sections at higher echelons. In fact, the company intelligence cell is most effective if its work is complementary to the battalion S2 shop's work, not in place of it.

A company intelligence cell should not be organized and tasked to perform those tasks that can be performed better by the already existing intelligence support systems and infrastructures. By focusing primarily on its own areas and conducting operations in the field, the company intelligence cell's strength is that it unquestionably is suited better for human intelligence (HUMINT) collection and local pattern analysis within its own AO than traditional military intelligence systems and organizations at higher levels. Commanders must understand this strength and organize their intelligence cells to maximize efforts in these areas, not overreach and attempt to handle everything under the broad umbrella of military intelligence.

To keep the focus on HUMINT and pattern analysis, company intelligence cells should be organized to meet three distinct requirements: collect raw HUMINT in the field, collect and record data in the CP and analyze the data collected or recorded in the field and in the CP. All else in the company intelligence cell's critical task list (CTL) comes from these three basic requirements. This demands that company intelligence cells organize in such a manner that divides work to maximize efficiency.

In the model implemented in E/2-5 Cav, the FIST is responsible for the collection of HUMINT in the field which includes: meeting with local nationals, conducting sensitive site exploitation (SSE) on objectives, conducting tactical questioning, etc. Simultaneously, headquarters platoon Soldiers are responsible for logging and plotting significant activities (SIGACTS) and collecting patrol debriefs. The responsibility for the final requirement, the analysis, lies with the company intelligence cell leadership—the FSO and FSNCO.

Mission. With the organization and basic requirements established, the commander and the FSO next must agree upon a mission statement for the intelligence cell. The E/2-5 Cav intelligence cell's mission was *to conduct company-level intelligence operations in the Iraq theater of operations during OIF 06-08 to support E/2-5 Cav's COIN and reconstruction operations.*

Brief and to the point, the mission statement answers the "five W's" (who, what, where, when and why) without getting into the specificity of how the mission is going to be accomplished. The simplicity of the mission statement is not indicative of a simple mission. The mission is broad and complex, further complicated by the fact that none of those executing the mission are trained intelligence professionals. This being the case, the "how" must be planned for in a detailed CTL and battle rhythm.

Critical Task List. The E/2-5 Cav intelligence cell deployed with an established CTL that was adapted and modified over time. Based on what that CTL became over the course of my time with E/2-5 and on thorough retrospection of how it could have been improved, Figure 2, on page 16, is a suggested CTL for all company intelligence cells. Each task is discussed below.

1. Collect data and conduct pattern analysis.

Collect and Analyze Patrol Debriefs. Patrol debriefs are important in painting the overall intelligence picture in a company AO. Though the FIST is responsible for the intelligence cell's operations in the field, the FIST reasonably cannot be on every patrol. These debriefs become the intelligence cell's record of what happened on missions and patrols it wasn't actively a part of. Detailed debriefs are vital not only in answering priority intelligence requirements (PIRs) and specific information requirements (SIRs), but also in providing a written record from which enemy tactics, techniques and procedures (TTPs) can be gleaned.

A complex ambush in one month might bear striking similarities to a complex ambush in an earlier month. Being able to confirm the details about the two attacks might help the company adjust its own procedures and prevent such attacks in the future. It is the headquarters Soldiers' responsibility within the intelligence cell to ensure debriefs are collected for review and analysis by the FSO and FSNCO. A method that worked in E/2-5 Cav was to have one laptop in the common area of the CP set aside for patrol leaders to

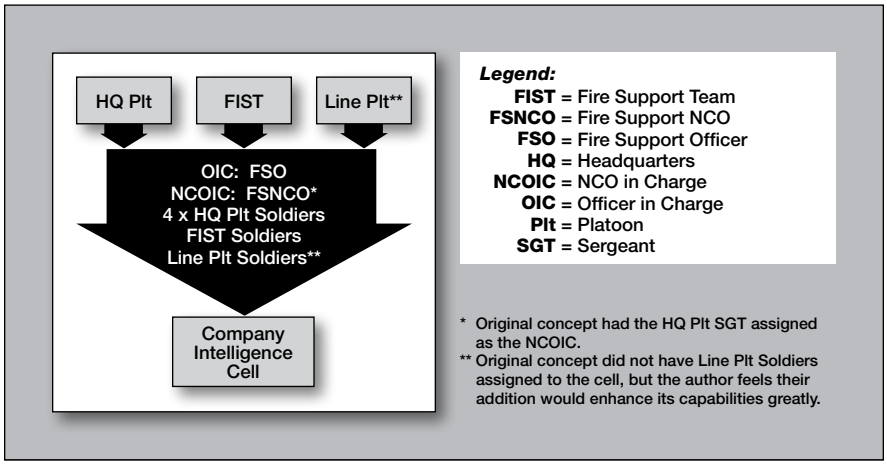


Figure 1: Building the Fire Support Team (FIST)-Centered Company Intelligence Cell

type their debriefs. Two copies would be printed—one for the battalion S2 and one for the company intelligence cell.

Track and Analyze all SIGACTS. Often, the best intelligence on the enemy is discovered through thorough analysis of his actions. Finding patterns in the enemy's operations allows the company to adjust its operations proactively to defeat or at least maintain momentum against the enemy. Company intelligence cells must keep a running tracker of all SIGACTS and conduct pattern analysis of SIGACTS by type, day, time and location. Constant attention to this will yield tangible results in the discovery of enemy centers of gravity, typical planning-execution and work-rest cycles, possible cache locations, etc., and allow the company to focus its operations accordingly.

To allow for the discovery of discernible patterns in a company AO, a baseline of 30 days of data should be used. Data covering 30 days allows for enough SIGACTS for patterns to become evident, while seven or 14 days of data will only show events, not patterns. A constantly updated 30-day tracker allows the company to notice changes in established patterns relatively quickly.

Additionally, company intelligence cells should track SIGACTS in their area of interest (AI) as well as their AO. These should be tracked because enemy organizations in the AI are closely related to, if not the same as, enemy organizations in the AO. Thus, patterns just outside the AO likely will reflect patterns within the AO. These also should be tracked because the enemy won't withhold an attack because a company's duties take it just outside the boundaries of its AO.

Conduct Local Intelligence Analysis and Forecast Enemy Actions. This task relies heavily on the pattern analysis described above. Combining pattern analysis with analysis of HUMINT gained from sources, tips, spot reports, intelligence reports, etc., will paint a detailed picture of what is going on in the AO with regard to enemy actions, popular opinion and loyalties of individuals, tribes or sects within the AO, and so forth. With this picture, the company intelligence cell can provide the commander with a reasonably accurate forecast of what the enemy's next steps may be.

2. Conduct HUMINT operations.

Create and Execute Tactical Questioning and SSE Plans. On intelligence-driven raids or similar operations, the company intelligence cell should be responsible for the tactical questioning plan and SSE plan. The cell knows best what questions need to be asked and determines what is to be searched for in which locations, such as cell phones in any room, weapons in the basement or surrounding premises, financial transaction documents in any room, documents in any room with certain individuals' names listed and other pertinent questions.

On any raid or similar operation, an SSE team should be factored into the plan for actions on the objective just as an infantry squad would factor enemy prisoner-of-war search teams and aid and litter teams into its plan for actions on the objective. In company-level operations, the FIST can assume this role, being the field arm of the company intelligence cell.

Target Individuals for Bilateral Engagements. Tactical HUMINT teams (THTs) are too few and too small to cover all companies in all operations effectively. Due to the primacy of HUMINT in COIN and the fact that planned meetings that generate HUMINT occur far less frequently in day to day operations than unplanned encounters that generate HUMINT, companies must have an independent way of executing bilateral engagements with local nationals without waiting for a scheduled meeting with a THT. This naturally falls under the purview of the company intelligence cell.

It is important, however, that the intelligence cell provides the battalion with a detailed summary of any exchange that generates HUMINT. The battalion intelligence section and the THT associated with it, if there is one, can format the summary into a draft intelligence report and log it into databases accessible by any unit or agency in theater or stateside with the necessary clearance. As these summaries are sent to the battalion, they should be sent to adjacent units simultaneously.

Supervise Detainee Operations. At the battalion level and higher, detainee operations fall under the realm of the intelligence sections, and this also should be the case at the company level. From the point of capture in the field, if possible, to the point of transfer to a higher authority, the intelligence cell is in charge of detainee operations. The intelligence cell ensures that paperwork is filled out and evidence is documented properly. Afterwards, the intelligence cell is the liaison between the company and whatever organizations or agencies exploit the evidence and interrogate the detainees, ensuring that the company is aware of any intelligence gained from those endeavors.

1. Collect data and conduct pattern analysis (34-3-9007*).
- Collect and analyze patrol debriefs.
- Track and analyze all significant activities (SIGACTS).
- Conduct local intelligence analysis and forecast enemy actions.

2. Conduct human intelligence (HUMINT) operations (34-3-9006*).
- Create and execute tactical questioning and sensitive site exploitation plans.
- Target individuals for bilateral engagements.
- Supervise detainee operations.

3. Facilitate exchange and dissemination of intelligence (34-5-0811*).
- Facilitate information flow between company and battalion S2.
- Facilitate intelligence sharing with adjacent units.
- Maintain intelligence board for outgoing patrols .
- Produce detailed monthly intelligence summary (INTSUM).

4. Advise the commander on intelligence-related matters (34-6-2036*).
- Conduct intelligence preparation of the battlefield (IPB) for company operations.
- Recommend company priority information requirements (PIRs) and specific information requirements (SIRs) to the commander.
- Provide targeting recommendations to the commander.
- Provide counterintelligence/deception recommendations to the commander.

*** The article numbers are the Digital Training Management System Combined Arms Training Strategy (DTMS CAT) listing of similar critical tasks for a battalion-level S2 shop using Military Intelligence as the proponent and Artillery as the unit type.**

Figure 2: Suggested Critical Tasks List for a Company Intelligence Cell

3. Facilitate exchange and dissemination of intelligence.

Facilitate Information Flow between Company and Battalion S2. This task is vital to the proper functioning of a company intelligence cell. One of the faults of a traditional battalion S2 shop is it is not accessible easily from the company level. The company intelligence officer and NCO can serve as the liaison between the company and the battalion S2, sorting through information and products gleaned from the S2 shop to separate what is relevant to the company's operations and ensuring the dissemination of appropriate intelligence throughout the company. Further, in ensuring the information flows both ways, the company intelligence cell can have a positive effect on the battalion S2 shop because of its unique and valuable

perspective gained from the company intelligence cell's intimate knowledge of its own AO and interaction with the local populace.

Facilitate Intelligence Sharing with Adjacent Units. In terms of contributing to the larger fight, this is the most important thing the company intelligence cell can do. A company's AO will never encompass the entire sphere of influence of any given tribe, sect or even individual. This being the case, a company's AO and AI undoubtedly will be merely a fraction of the size of its enemies' AO and AI. With intelligence sharing across unit boundaries going through the usual channels, a company rarely will receive relevant and timely intelligence from the areas around it if those areas are controlled by other battalions, brigades or divisions. This problem can be solved by company intelligence cells serving as conduits of information—facilitators of a mutual exchange of relevant and timely intelligence with adjacent units for the benefit of all units involved.

E/2-5 Cav's AO in OIF 06-08 sat in the southwestern portion of its brigade's AO, which in turn lay in the northwestern portion of the division's AO. As such, its western boundary was a division boundary split by an Iraqi Army (IA) battalion and a US Marine Corps (USMC) regimental combat team, its southern boundary was a brigade boundary with a US Army brigade, and much of its eastern boundary was a brigade boundary with an IA brigade. Further, the majority of the locals in the AO were of a Sunni tribe that was not numerous in the rest of the battalion AO, but enjoyed prominence in the IA and USMC controlled areas to the west and in a different brigade's AO to the south. What happened in E/2-5 Cav's AO affected events in those areas, and what happened in those areas affected events in E/2-5 Cav's AO.

This being the case, we gradually forged a network of willing junior officers and senior NCO's from all concerned units for the purpose of sharing intelligence. Up-to-the-minute information was shared as fast as secure internet protocol routing (SIPR) or secure voice-over-internet protocol (SVOIP) lines could carry the messages. As a result, all units involved gained better situational awareness in their respective AOs and were able to enhance their targeting efforts.

In one notable case, this non-hierarchical intelligence sharing between multiple units at the junior officer and senior NCO level led to the discovery of the compositions and operational templates of two al Qaeda-affiliated organizations in a town sitting along the MultiNational Division, Baghdad (MND-B) and MultiNational Forces, West (MNF-W) boundary. This proved to be an important first step in the eventual successful effort to regain control of that city.

Maintain Intelligence Board for Outgoing Patrols. The platoons and the company will benefit from a well placed, well kept intelligence board somewhere in the company CP. The board serves as a quick reference for leaders before missions. The intelligence board should include the following: current light and weather data, updated SIGACT trackers and graphs, current battalion and company PIRs and SIRs, enemy situational template, recently observed enemy TTPs, current route status and copies of the most recent monthly intelligence summary.

Produce Detailed Monthly Intelligence Summary. Every month, the intelligence cell should produce a detailed intelligence summary. This product is singularly important because it can shape company operations significantly. The intelligence summary should include a written summary of the current situation in the AO, noting the identities and dispositions of key individuals and groups (friendly and hostile), the current overall enemy situation, a written 30-day SIGACT analysis noting recent patterns, a 30-day SIGACT rollup chart (see Figure 3), 30-day SIGACT graphs by type, time and day, and a map of the AO noting locations of SIGACTS in the last 30 days.

4. Advise the commander.

Conduct Intelligence Preparation of the Battlefield for Company Operations. The company intelligence cell is to company operations what the battalion S2 shop is to battalion operations. Based on all

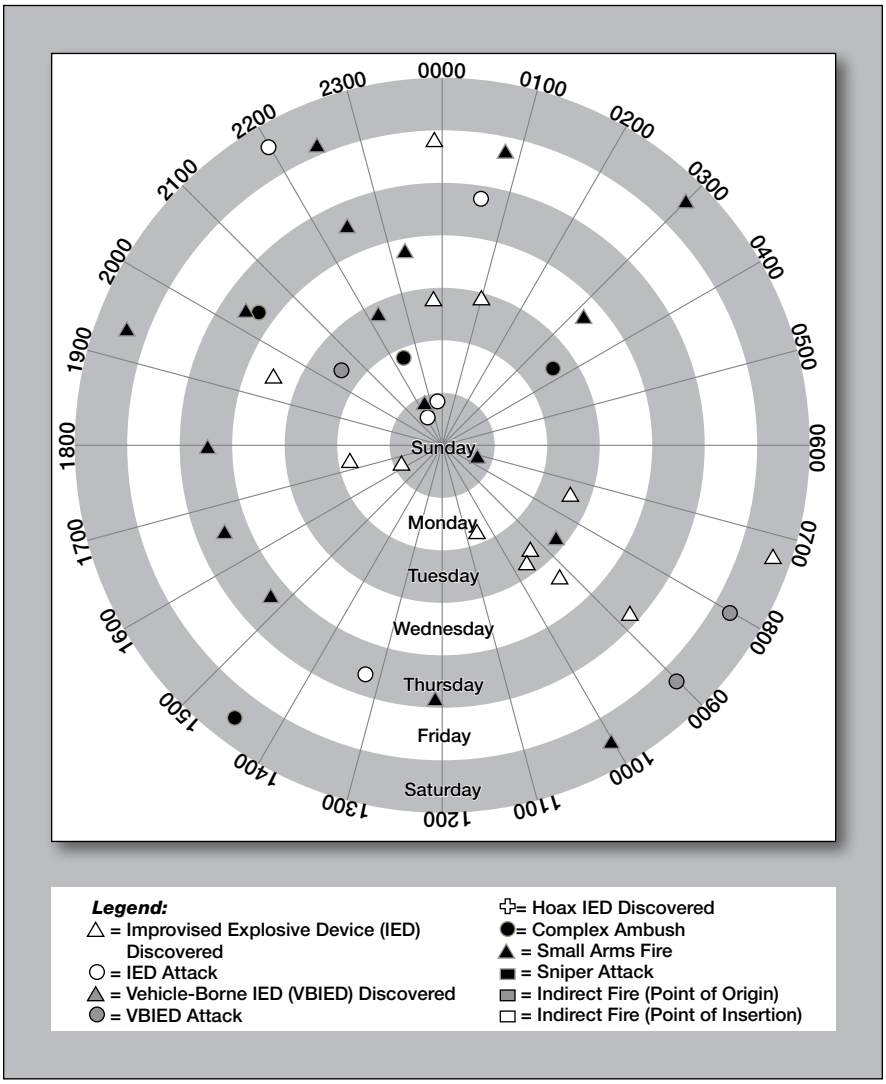


Figure 3: Patterns of activity can be found by charting by days of the week using this area of operation (AO)/area of interest (AI) 30-day SIGACTS rollup chart.

the analysis the company intelligence cell produces and its forecast of enemy actions, the company intelligence cell should be prepared to present the commander with the enemy's most likely and most dangerous courses of action. The FSO, as the intelligence cell OIC, also should be ready to produce paragraph one of all company operations orders.

Recommend company PIRs and SIRs to Commander. Constant review and analysis of information and events should answer many questions, but also should reveal more questions that need to be answered. As these questions arise, the company intelligence cell recommends them to the commander as company PIRs and SIRs. The intelligence cell must keep in mind that PIRs are those questions that the company always will need to answer while SIRs are those questions that need to be answered on the short term, in preparation for a certain operation or to shed light on a specific target. Once approved by the commander, the intelligence cell ensures that updated PIRs and SIRs are distributed throughout the company.

Provide Targeting Recommendations to the Commander. Targeting typically is strictly in the FSO's realm. But with the FSO assuming responsibility for the intelligence cell and targeting in COIN being based thoroughly on intelligence, it is reasonable to expect the intelligence cell to provide recommendations on whom to target for detention, whom to target for engagement, which locations to target for destruction as enemy safe havens and so on. The intelligence cell's perspective also can add new dimensions to targeting: which locations to target for cache searches, which times of day to target for extra presence in the AO, which days to target for nonlethal operations versus which days to target for lethal operations, etc.

Provide Counterintelligence and Deception Recommendations to the Commander. In COIN, the enemy always is present and watching. While it would prove extremely difficult, if not impossible, to stop him from watching, efforts can be made by the intelligence cell to prevent him from understanding what he sees. This can manifest itself actively in specific and detailed recommendations of certain measures the company could take to disguise the purpose of any given action or to divert attention away from a given objective. This also can manifest itself passively in force protection recommendations based on a "red team" analysis of what the enemy sees, as in recommending altering routes at certain times of day because the company has established noticeable patterns.

Daily
- Collect patrol debriefs. (HQ)
- Review and analyze patrol debriefs. (FSO and FSNCO)
- Conduct data processing and update maps, templates and graphics. (HQ)
- Supervise detainee packets. (FSO, FSNCO)
- Provide counterintelligence and deception recommendations as required. (FSO, FSNCO)
- Exchange data with battalion S2 and brief commander. (FSO, FSNCO)
- Conduct sensitive site exploitation and weapons intelligence, as needed. (FIST)
- Update all trackers and graphs. (FSO, FSNCO)
- Update intelligence board for outgoing patrols. (FSO, FSNCO)
- Contact adjacent units for intelligence sharing. (FSO, FSNCO)
- Write detailed summaries of any HUMINT collected. (FSO, FSNCO)

Weekly
- Analyze week's events. (FSO, FSNCO)
- Conduct pattern analysis for the last 30 days.
- Refine enemy situational template.
- Forecast enemy actions.
- Identify potential targets.
- Identify/update company named areas of interest.
- Update company priority information requirements.
- Update sewer, water, electricity, academics, trash, medical and security (SWEAT-MS) assessments.
- Brief commander.

Monthly
- Analyze month's events. (FSO, FSNCO)
- Analyze patterns for the last 30 days.
- Produce detailed monthly intelligence summary.
- Brief company leadership.

Figure 4: A Suggested Battle Rhythm

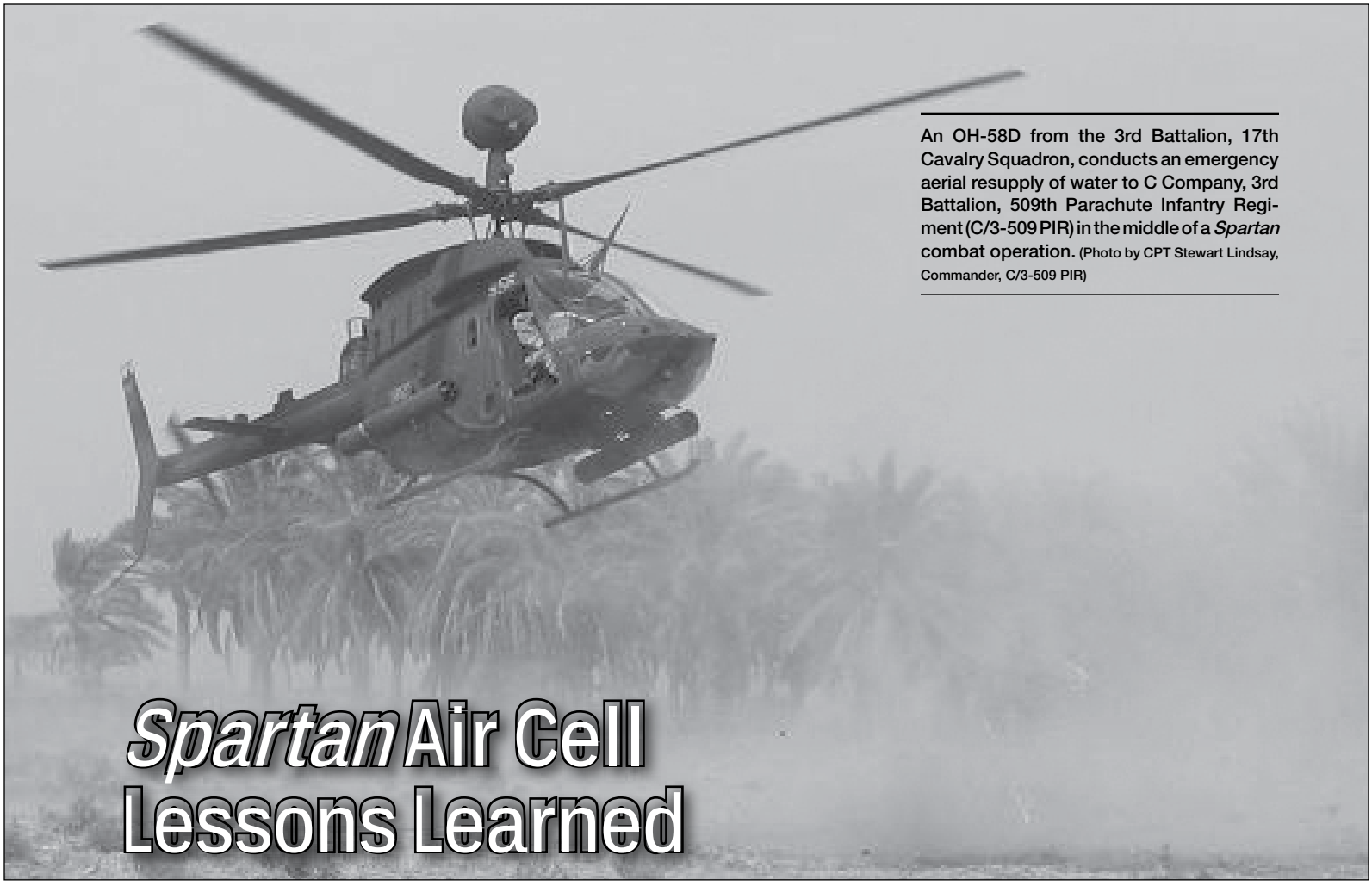
Battle Rhythm. The CTL discussed above is a tall order and will keep the company intelligence cell busy. To prevent its operations from falling into chaos, it is necessary to plan out a battle rhythm for the cell. Figure 4 is a suggested battle rhythm based on my experiences.

In COIN, the enemy blends into the local populace making HUMINT paramount. Companies operate under increased autonomy using a framework in which intelligence drives operations while operations drive intelligence. These conditions are antithetical to how we traditionally are organized to wage war. These unique conditions demand unique solutions. The best way for companies to set themselves up for success under such conditions is to organize for intelligence—to create a system with which it can collect, process and analyze its own intelligence, upon which the company can base its own operations.

The ideal is to use company FISTs as the foundation for company intelligence cells; although Soldiers from the headquarters platoons should play a role and the use of Soldiers from line platoons as platoon representatives to the cell should be considered. By organizing company intelligence cells in this manner, companies will demand much from those relatively untrained in that which is being demanded. Furthermore, this is a new concept, and there is no doctrine to fall back upon. Because of this, companies must set their intelligence cells up for success with thorough planning during the organization phase. This planning should manifest itself in a detailed CTL and battle rhythm.

The CTL and battle rhythm submitted in this article are based on the successful operations and, in more than a few cases, the growing pains of an intelligence cell implemented within E/2-5 Cav during OIF 06-08. The actions of the company intelligence cell allowed E/2-5 Cav to focus its targeting and operations better and helped set the conditions for the company to eliminate a large al Qaeda in Iraq support zone in its AO. These recommendations might not be universally beneficial in all company AOs, but I hope they serve as a foundation upon which other companies can build their own intelligence cells.

First Lieutenant Rory M. McGovern, Field Artillery (FA), is a Platoon Leader for A Battery, 1st Battalion, 82nd FA (A/1-82 FA), 1st Cavalry Division, deployed to Operation Iraqi Freedom (OIF) in Taji, Iraq. He also has served as the Company Fire Support Officer for E/2-5 Cavalry in OIF. He holds a BA in Political Science from Boxton College in Chestnut Hill, Massachussetts.



An OH-58D from the 3rd Battalion, 17th Cavalry Squadron, conducts an emergency aerial resupply of water to C Company, 3rd Battalion, 509th Parachute Infantry Regiment (C/3-509 PIR) in the middle of a *Spartan* combat operation. (Photo by CPT Stewart Lindsay, Commander, C/3-509 PIR)

Spartan Air Cell Lessons Learned

By Captain Melissa A. Viator, AD

During Operation Iraqi Freedom (OIF) 06-08, aviation assets consistently were one of the most effective support multipliers for maneuver operations. The *Spartan* air cell—the 4th Brigade Combat Team (BCT) (Airborne), 25th Infantry Division, Air Defense Airspace Management and Brigade Aviation Element (ADAM/BAE) combined cell—made an impact during these OIF combat operations through air coordination, air assets and air operations.

This article explains how the *Spartan* air cell, as the primary focal point in the current and future operations sections of 4 BCT, and the lessons it learned during the cell's OIF deployment make the cell's functions critical for today's fight .

The *Spartan* air cell's primary functions among all three brigade staff sections included current operations, future operations and plans. Operating as a team, the Air Defenders—including the brigade aviation officer, Air Defense officer, warrant officer and enlisted personnel—and aviators synchronized operations in the assigned airspace in support of the maneuver force commanders and troops-in-contact.

The *Spartan* air cell coordinates all BCT air operations and provided situational awareness and airspace deconfliction to airspace users. It also was responsible for all airspace advisories, restricted airspace management and air coordination that encompass this large operating environment. Essentially, the *Spartan* air cell facilitated all operations and significantly increased the ground maneuver capabilities in its unique operational environment.

From October 2006 through December 2007, the *Spartan* air cell conducted airspace deconfliction in southern Iraq for more than 850 Raven unmanned aerial vehicle (UAV) missions, 190 medical evacuation responses, 14,209 counterfire and (or) scheduled fire missions, daily controlled detonations, weather balloon launches and 20 kinetic strikes (Air Force close air support or CAS). Also, it provided air advisories in support of the aerostat surveillance system at Forward Operating Base (FOB) Kalsu.

Lessons Learned. Lessons learned and incorporated into the cell's operating procedures during the deployment include cross training assigned personnel, increasing communications reliability by the addition of another VHF radio to the cell's assets, making more efficient use of the air planner and discovering that the use of company (-) operations in conjunction with air support is more efficient and effective.

Cross Training. One of the most important lessons we learned was that within the large area of operations (AO), the airspace deconflictions allowed consistant and efficient airspace-procedural control through cross training the Military Occupation Specialties (MOS) 14 J Early Warning System Operator and 15P Aviation Operation Specialist personnel to each others' specialties.

During the deployment, the MOS cross training enabled the lower-ranking air operators to function at a skill level above what they typically could, freeing up supervisors to perform other tasks. This was critical because, due to the volume of airspace users and an average of 10 to 12 planned air mission requests for attack aviation, lift support or airspace control measures were coordinated and processed daily. Also, immediate air mission requests such as UAV launches, medical evacuation updates and 9-line

medical evacuation requests were managed by air operators. Air operators monitored the Sentinel radar air picture and briefed the combat aviation operating center (CAOC).

The resulting more efficient use of assigned personnel due to the cross training highlights a need for continued cross training of the MOS 14J and 15P for air cells in the future.

Communications. All air-related operations are transmitted through two primary communication systems in use during the deployment—multi-user Internet relay chat (mIRC) and VHF radio. Once in Iraq, the cell discovered that two VHF radios were necessary to maintain communications with our local airspace control tower and the common traffic aircraft frequency. The two radios allowed us to segregate air space.

Air Planner. The unit learned to maximize the use of the air planner. The air planner ensured that aviation assets were synched in conjunction with our biweekly targeting cycle or a series of preplanned operations, freeing up the brigade commander and staff so they could focus on target acquisition and an efficient use of assets.

Attack aviation was focused on counterinsurgency (COIN) operations and provided security through an aerial platform. Common tasks of attack aviation, or aerial security, include counteractions against improvised explosive devices (IEDs), explosively formed penetrators and indirect fire. Pilots provide target development by reporting observed activity to the air planner.

Based on the targeting cycle, the air planner developed the concept of aviation support through ISR and terrain denial and coordinated air assets in support of the reconnaissance and surveillance plan and asset synchronization.

New attack aviation pattern-analysis products were designed in theater. Then, these were used by the air planner to record and predict enemy antiaircraft thresholds and to plan for offensive operations. These planning products streamlined the air planner tasks and allowed for faster dissemination of the information to the commander and staff.

Company (-) Operations. Another important lesson learned during the deployment was discovering that using company (-) operations in conjunction with air support turned out to be more effective in this operational environment. Although the brigade planners helped coordinate and synchronize maneuver and air operations, it was the air concept of operations that set the initial planning factors. Additionally, without air assets and airspace coordination the primary means of transportation of Soldiers and supplies in theater would not exist.

Operations. During the deployment, the cell acquired lessons learned and increased our efficiency and skills in performing nonconventional and conventional operations, air-to-ground integration, airspace deconfliction and lift support.

Nonconventional Operations. We prioritized air support and airspace coordination to support the Iraqi government and provincial reconstruction teams (PRTs) in Najaf, Karbala and Babil Provinces. Attack and lift aviation support is recognized explicitly by the ISF and the local populace as a positive symbol to Iraqi security forces (ISF) and the local populace.

The joint operations with aviation support are a demonstration that Coalition Forces (CF) and ISF are cooperating. For example, when the 4 BCT and the 8th Iraqi Army (IA) commanders conducted two aerial leaders' reconnaissances over AO Sparta during the Ar Ba'een pilgrimage and the observance of Imam Ali Mohammad's death, the key leaders could observe joint security check points and all religious shrines in Karbala and Najaf within a two-hour period. With dedicated paratroopers, the *Spartan* air cell coordinated attack aviation for protection against Shiite militias and Sunni al Qaeda efforts toward sectarian violence. During the observance of Imam Ali Mohammad's death, aviation assets also supported 4 BCT and 8th IA commanders with aerial security and lift support.

Conventional Operations. During OIF 06-08, attack weapons supported most aerial operations because we learned they were one of the most effective as a security and offensive asset. More than 95 percent of our named operations were conducted with attack aviation on station. Consequently, aerial security provided CF freedom of maneuver, deterrence and interdiction capabilities against insurgent activity.

We found that coordination through the *Spartan* air cell for all CF and ISF air operations, airspace clearance and other specialty operations is imperative. For conventional operations, CF must be on the ground operating with the ISF to conduct COIN operations and communicate with other coalition aerial support. In the Babil and Karbala Provinces, it is common for paratroopers and IA soldiers to conduct joint operations with aviation support.

Of the 475 named operations conducted in less than a 12-month period, 451 operations included an attack aviation concept of support. Among these mentioned operations, both 4 BCT and the IA elements made up the task organization. Attack aviation supported seven target strike packages that were conducted by 2nd Battalion, 3rd Stryker Brigade Combat Team (2-3 SBCT) and other dependent units such as the local "operational detachment alpha."

Spartan air cell was the only air coordinator in their AO that integrated all units on the ground with some form of air support. In short, our efforts for security commonly were conducted by means of air-to-ground integration operations through the ground maneuver forces and air operators.

Air-to-Ground Integration. The air cell's air-to-ground integration improved and, consequently, the air-to-ground integration became the most effective combat tactic for company (-) operations.

Our most notable air assaults were conducted by company (-) elements accompanied by signal and human intelligence enablers for precision targeting. Company air assaults were most agile with a four-UH-60 insertion with the support of attack weapons, UAVs and a restricted operating zone. Air assaults were successful because they allowed ground forces to avoid IEDs and explosively formed penetrators during infiltration and extraction. Air assets were a critical part of 4 BCT's efforts in support of 2nd Brigade, 10th Mountain Division's search and recovery initiatives. Of the eight operations, three were air assaults conducted west of the Euphrates River Valley by the 1-501 PIR.

Area and route reconnaissance continued to be the main task for paratroopers and attack weapons in support of AO Sparta. Tasks to secure main and alternate supply routes became the priority for most company operations. Integrating paratroopers, engineers and attack aviation was effective during route sanitation and clearance operations as enemy attacks along specific routes continued to decrease.

In addition, attack aviation provided CF and ISF with an ISR capability in general support known as "countermortar, counterrocket reconnaissance IED

An OH-58D flies cover for C/3-509 PIR as they secure a main route. (Photo by CPT Stewart Lindsay, Commander, C/3-509 PIR)

integration" (CMR^2I). CMR^2I was a daily ISR plan that supported our brigade by use of an aerial platform. Attack aviation assets conducted specific area and route reconnaissance in support of counter-operations as an enduring framework. CMR^2I resulted in an increase of attack aviation support in our AO and provided a daily air asset that could be retasked dynamically by current operations in the event of troops-in-contact. The air planner managed attack aviation operations and the CMR^2I concept of support while the brigade aviation officer was the overall Army airspace command and control (A^2C^2) supervisor.

Airspace Deconfliction. Air Defenders bring a unique capability to the OIF fight providing a third-dimensional depiction of the battlefield to the brigade through the Air Defense and Aviation systems. All air assets below 3,000 feet can be deconflicted either manually or graphically through four main airspace management systems: Tactical Airspace Integration System (TAIS), air and missile defense workstations (AMDWS), forward area air defense command and control ($FAADC^2$) and Air Defense System Integrator (ADSI). These systems are interconnected with each other; however, the TAIS is our main communication system with the division A^2C^2 cell and echelons above corps. Just as important, our air picture is provided through the $FAADC^2$ system that can search a 30 kilometer radius (75 kilometer degraded). The air picture can be received from several Sentinel radars. Once all air assets are coordinated for a specific operation, aircraft can depict time and/or lateral and vertical separation graphically.

Our combat airspace, comprised of 40,527 square kilometers, was saturated with various types of air assets that maneuver through Najaf, Karbala and Babil Provinces. Airspace advisories for all airspace users were predominantly our focus. Inevitably, the *Spartan* air cell was the focal point for all conventional and nonconventional air support, and that support became more efficient during the course of the deployment and with the incorporation of the lessons we learned. Counterfire missions and lethal strikes required airspace clearance before release of artillery and other munitions. Raven UAV flights were almost always immediate requests that required implementing restricted airspace within five minutes. All named operations conducted by subordinate units received a restricted operating zone to alleviate airspace saturation and unimpeded freedom of maneuver.

Lift Support. IEDs were our greatest threat in North Babil. Although there is an antiaircraft artillery and small-arms fire threat, there was less risk assumed by using the air lift support Marne express or special air mission requests. Paratroopers were confronted with the IED threat everyday as mounted and dismounted operations were imperative. It was inevitable that the more movement by ground, the stronger our knowledge of IED and explosively formed penetrators thresholds became understood by both maneuver and aviation units. Because of the potential risk on the roads, paratroopers quickly adapted to unpredictable lift schedules and learned to pre-plan air movement as necessary.

Since OIF 05-06, units have deployed and redeployed into North Babil by means of aviation lift support. During OIF 06-08, 3,685 *Spartans* have deployed to respected FOB locations, traveled to and from environmental morale leave, conducted mission essential air movements and redeployed by use of aviation lift assets. Air Defenders will continue the current air operations tempo, facilitate air mission requests and coordinate brigade onward movement from the Baghdad Airport until the transition of authority is complete.

The *Spartan* air cell was involved with every combat operation during OIF 06-08. Throughout the deployment in North Babil, 4 BCT demonstrated greater advantages of partnership with the government and ISF. Holy pilgrimages and observances, air assault operations and other myriad operations were effective with the support of air assets and airspace coordination throughout the "Clear, Hold, Build" campaign. The combination of Air Defenders and aviators working as a team in the *Spartan* air cell was the most beneficial supporting capability in support of maneuver operations. Air-to-ground integration was very effective for this diverse operational environment and with multiple nonconventional and conventional operations. Based on the effective operations discussed, air assets, airspace coordination and airspace deconfliction was the root of all operations in support of the counterinsurgency.

During this deployment, the *Spartan* air cell and the lessons it learned impacted all maneuver units, supported rapid mass or specialized movement positively and affected all airspace users.

Captain Melissa A. Viator, Air Defense (AD), is the Assistant S3 and Air and Missile Defense Air Plans Officer for 4th Brigade Combat Team (BCT) (Airborne), 25th Infantry Division, Fort Richardson, Alaska, recently redeployed from Operation Iraqi Freedom (OIF) 06-08. She has served as a Platoon Leader, Patriot Battery Master Trainer and Battery Executive Officer for Charlie Battery, 1st Battalion, 43rd Air Defense Artillery (C/1-43 ADA), 35th ADA Brigade at Osan, Republic of Korea; Battery Executive Officer for C/2-1 ADA, 35th ADA Brigade, at Fort Bliss, Texas; and the Aide-de-Camp of the Deputy Commanding General, US ADA Center and Fort Bliss. She holds a Masters of Management and Leadership from Webster University, St. Louis, Missouri.

beyond the call of duty— THE MEDAL OF HONOR

The Medal of Honor is the supreme award this nation bestows on its armed forces for gallantry and intrepidity in combat above and beyond the call of duty. The deed performed must have been one of personal bravery or self sacrifice so extraordinary and conspicuous as to distinguish the individual above his comrades and must have involved risk of life. Only the President of the United States can award a Medal of Honor. [1]

The following are two examples of Medal of Honor winners who did what was necessary to accomplish their missions and protect their comrades—even if it cost them their lives.

Some of the stories of Soldiers who earned medals including the Distinguished Service Cross and Silver Star are on subsequent pages of this edition.

LTC John U.D. Page

Lieutenant Colonel (LTC) John Upshur Dennis Page attached to the 52nd Transportation Truck Battalion, X Corps Artillery, won the Medal of Honor for his actions at Chosin Reservoir in Korea from 29 November through 10 December 1950. He was one of seven Army and three Marine Artillerymen who won the Medal of Honor during the Korean War, 1950 to 1953.[2]

LTC Page, commissioned in 1926 as a Field Artillery officer in the Organized Reserves, was called to duty as an instructor at Fort Sill, Oklahoma. During World War II he commanded an Artillery battalion in Europe. In 1950, during the Korean War, he pulled strings to get overseas. The colonel was with the 1st Marine Division along with a few other Army troops at Chosin Reservoir during their battle against thousands of enemy troops. [3]

LTC Page was killed in action in 1950, when, concerned about the column of Marines and some Army Soldiers being ambushed at the bottom of a steep pass at Chosin Reservoir, he single-handedly assaulted the center of the enemy position, disorienting them and rallying the Americans. The following Medal of Honor citation, awarded posthumously, describes LTC Page's actions from 29 November through 10 December 1950.

"LTC Page, a member of X Corps Artillery, distinguished himself by conspicuous gallantry and intrepidity in action above and beyond the call of duty in a series of exploits. On 29 November, LTC Page left X Corps Headquarters at Hamhung with the mission of establishing traffic control on the main supply route to 1st Marine Division positions and those of some Army elements on the Chosin Reservoir plateau. Having completed his mission, LTC Page was free to return to the safety of Hamhung but chose to remain on the plateau to aid an isolated signal station, thus being cut off with elements of the

Marine division.

"After rescuing his jeep driver by breaking up an ambush near a destroyed bridge, LTC Page reached the lines of a surrounded Marine garrison at Koto-ri. He then voluntarily developed and trained a reserve force of assorted Army troops trapped with the Marines. By exemplary leadership and tireless devotion, he made an effective tactical unit available. In order that casualties might be evacuated, an airstrip was improvised on frozen ground partly outside of the Koto-ri defense perimeter which was continually under enemy attack. During two such attacks, LTC Page exposed himself on the airstrip to direct fire on the enemy and twice mounted the rear deck of a tank, manning the machine gun on the turret to drive the enemy back into a no man's land.

"On 3 December while being flown low over enemy lines in a light observation plane, LTC Page dropped hand grenades on Chinese positions and sprayed foxholes with automatic fire from his carbine. After 10 days of constant fighting, the Marine and Army units in the vicinity of the Chosin Reservoir had succeeded in gathering at the edge of the plateau, and LTC Page was flown to Hamhung to arrange for Artillery support of the beleaguered troops attempting to break out. Again LTC Page refused an opportunity to remain in safety and returned to give every assistance to his comrades. As the column slowly moved south LTC Page joined the rear guard. When it neared the entrance to a narrow pass, it came under frequent attacks on both flanks. Mounting an abandoned tank LTC Page manned the machine gun, braved heavy return fire, and covered the passing vehicles until the danger diminished. Later when another attack threatened his section of the convoy, then in the middle of the pass, LTC Page took a machine gun to the hillside and delivered effective counterfire, remaining exposed while men and vehicles passed through the ambuscade [ambush site].

Realizing the danger to the column as it lay motionless, LTC Page fought his way to the head of the column and plunged forward into the heart of the hostile position. His intrepid action so surprised the enemy that their ranks became disordered and suffered heavy casualties.

"On the night of 10 December, the convoy reached the bottom of the pass but was halted by a strong enemy force at the front and on both flanks. Deadly small-arms fire poured into the column. Realizing the danger to the column as it lay motionless, LTC Page fought his way to the head of the column and plunged forward into the heart of the hostile position. His intrepid action so surprised the enemy that their ranks became disordered and suffered heavy casualties. Heedless of his safety, as he had been throughout the preceding 10 days, LTC Page remained forward, fiercely engaging the enemy single-handed until mortally wounded. By his valiant and aggressive spirit LTC Page enabled friendly forces to stand off the enemy. His outstanding courage, unswerving devotion to duty, and supreme self-sacrifice reflect great credit upon LTC Page and are in the highest tradition of the military service."

The Marine Corps awarded LTC Page a posthumous Navy Cross for his actions. [4]

One of the Military Sealift Command's container ships is named in honor of LTC Page. The *MV LTC John U.S. Page* is one of 34 ships in the Prepositioning Program that supports the US military with equipment and supplies using strategically positioned ships in the world's ocean.

Endnotes:
1. Major David T. Zabecki, "American Artillery and the Medal of Honor," *Field Artillery* (December 1987), 24.
2. David T. Zabecki, *American Artillery and the Medal of Honor* (Bennington, VT, Merriam Press, 2006), 49-40.
3. "The Army Reserve in the Korean War," available online at the United States of America Korean War Commemoration website http://korea50.army.mil/history/factsheets/army_reserve.shtml.
4. Ibid.

Sergeant Mitchell W. Stout

By W. Blair Case

Sergeant (SGT) Mitchell W. Stout is Air Defense Artillery's (ADA's) only Medal of Honor recipient; but, for decades, he's also been something of a mystery. It is surprising to discover how little the Branch actually knows about him. The Sergeant Mitchell W. Stout Physical Fitness Center at Fort Bliss, Texas, one of the installation's most prominent structures, is named after him, but there's nothing in the files except a blurry photograph and the Medal of Honor citation. Perhaps, earlier historians thought the citation was sufficient. Mitchell Stout, the Soldier, has been obscured by the aura that surrounds the Medal of Honor. In a sense, he's been ADA's "Unknown Soldier."

SGT Stout was killed in action in 1970 while his Duster unit guarded the Khe Gio Bridge. Located near a frequently beleaguered Marine outpost called The Rockpile, the vital bridge spanned a stream just below the demilitarized zone that separated South Vietnam from North Vietnam. The following Medal of Honor citation, describes SGT Stout's actions during a sapper attack on his unit's firing position.

"The Department of the Army awards the Medal of Honor posthumously to Sergeant Mitchell W. Stout, [social security number removed], United States Army, Battery C, 1st Battalion, 44th Artillery, who distinguished himself on March 12, 1970, during an attack by a North Vietnamese Army sapper company on his unit's firing position at Khe Gio Bridge, Republic of Vietnam. Sergeant Stout was in a bunker with members of a searchlight crew when the position came under heavy enemy mortar and ground attack. When the intensity of the mortar attack subsided, an enemy grenade was thrown into the

On his first tour in Vietnam, SGT Stout was a member of the 1st Platoon, 4th Squad, B Company, 2nd Battalion, 47th Infantry Regiment (MECH), 9th Infantry Division. Photo was taken during the November-December 1968 timeframe, probably in Binh Phuoc, Long An Province. Other members of his squad are (from top left, clockwise), Stan Krawiec, Mitchell Stout, Bob Varain, Richard Clendenning, Monte Swenson, and Ted Carlson. (Photo Courtesy of Ed Andrews, Squad Leader)

bunker. Displaying great courage, Sergeant Stout ran to the grenade, picked it up, and started out of the bunker. As he reached the door, the grenade exploded. By holding the grenade close to his body and shielding its blast, he protected his fellow Soldiers in the bunker from further injury or death. Sergeant Stout's conspicuous gallantry and intrepidity in action, at the cost of his own life, are in keeping with the highest traditions of the military service and reflect great credit upon his unit and the United States Army."

Sapper attacks usually began with a mortar barrage designed to drive defenders into bunkers. As mortars rounds impacted inside defensive positions, sappers carrying satchel charges and grenades slithered through the tangled foot and concertina wire. Once inside the perimeter, they hurled their explosives into bunkers. Sometimes the defenders, mistaking the blast of exploding satchel charges and grenades for impacting mortar rounds, never realized they were under ground attack until it was too late.

SGT Mitchell Stout grew up in Tennessee, the same state as SGT Alvin York, World War I's most famous combat Soldier. The Medal of Honor citation leaves no doubt that SGT Mitchell Stout, like SGT York, was an authentic hero, at least during one adrenaline-charged moment, but it leaves a lot of questions unanswered. What type of Soldier, really, was SGT Mitchell Stout?

Displaying great courage, Sergeant Stout ran to the grenade, picked it up, and started out of the bunker. As he reached the door, the grenade exploded. By holding the grenade close to his body and shielding its blast, he protected his fellow Soldiers in the bunker from further injury or death.

The US Army Air Defense Artillery School (USAADASCH) asked the Vietnam Duster, Quad 50, Searchlight and Hawk Association to help fill in the blanks. The association furnished the name of James R. (Buddy) White, a friend of Mitchell Stout's since high school days.

They don't call Tennessee the "Volunteer State" for nothing. When Congress asked Tennessee to furnish 3,000 volunteers to fight the Mexican War, 30,000 Tennesseans rushed to volunteer. But the Vietnam War split Tennessee, like the rest of the nation, into pro-war and antiwar factions. Buddy White, one of Mitchell Stout's high school buddies, found himself straddling the line.

"I had my doubts about the American involvement in Vietnam," said White. "I advised Mitchell, when he was home on leave, not to volunteer for a second tour. Why?" I asked.

"Maybe I can help someone," he answered.

"Mitchell thought the Army's replacement system sent Soldiers with too little training straight into combat in Vietnam," White recalled. "I thought the GIs who served in Vietnam got a rotten deal. They never got the recognition they deserved," said White. Outraged over the treatment accorded returning veterans and determined that Mitchell Stout's sacrifice would not be forgotten, White conceived and spearheaded a drive to convert Mitchell Stout's burial place into a memorial.

Today, White has to keep reminding people that he never served in Vietnam, but ADA Soldiers who pulled combat tours in Vietnam regard White as an "honorary" Vietnam Veteran. "I'm not one of them, but they are sort of like cousins," White says.

Thanks to Buddy White, the SGT Mitchell W. Stout file at Fort Bliss is no longer an almost empty folder. The information reveals that SGT Mitchell Stout's Medal of Honor was no fluke. A typical American youth, Mitchell Stout became an outstanding Soldier who exemplified the Army's Core Values: Loyalty, Duty, Respect, Selfless Service, Honor, Integrity and Personal Courage.

W. Blair Case is the Editor of *Air Defense Artillery Online*, an Internet-only publication produced by the US Army Air Defense Artillery School, Fort Bliss, Texas. He served as editor of *Air Defense Artillery* magazine from December 1981 until December 2006, when *Air Defense Artillery* and *Field Artillery* merged to create the *Fires* Bulletin. He was commissioned as a Field Artillery second lieutenant upon graduation from the Artillery Officer Candidate Course, Fort Sill, Oklahoma, in 1968 and served one tour of duty in Vietnam as a Field Artillery Forward Observer and Liaison Officer with the 2nd Battalion, 319th Artillery, 101st Airborne Division (Airmobile).

We prefer action digital photos—Soldiers, Marines or systems in actual operations or training vice posed or static. "Hi-Mom" shots of Soldiers or Marines in a group smiling and waving usually don't add value to the article—unless, of course, the photos were shot immediately following the cessation of combat operations.

Here are some guidelines you can follow to give us high enough resolution photos in formats we can use.

Shoot the picture at the highest resolution possible. Set your digital camera on the largest image size and the highest quality resolution the camera will allow. The highest resolution settings usually are called "High," "Super Fine" or "Ultra-High." Cameras set at "Standard" or "Basic" quality can sometimes produce images only good enough for websites or PowerPoint presentations, not publication in a magazine. Just because a photo looks good on your computer screen does not mean it is printable in *Fires*.

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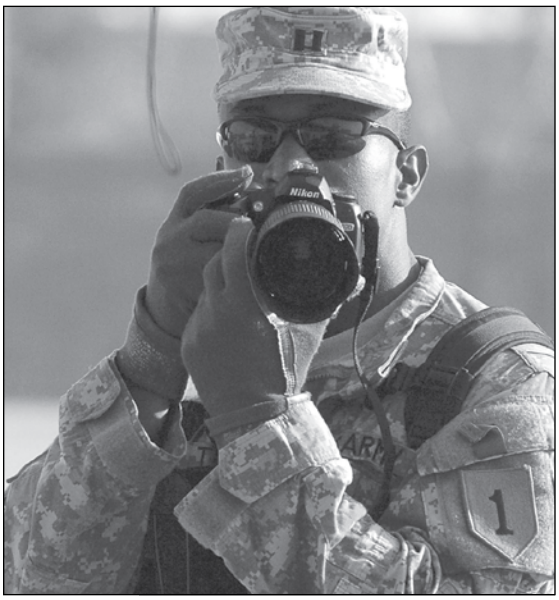

CPT Kollin Taylor, commander of C Company, Brigade Special Troops Battalion, 4th Infantry Brigade Combat Team (4 BCT), 1st Infantry Division (1st IN Div), is one of many Soldiers who photograph and document events in the field. (Photo by PFC Nathaniel Smith, 4 BCT, 1st IN Div)

2008 *Fires* Photo Contest

We are accepting entries for the next photo contest until 1 August 2008. For contest rules and last year's winners, go to http://sill-www.army.mil/firesbulletin/contest.asp.

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We know the majority of our digital shooters are not professional photographers. You are authors/photographers who are Soldiers and Marines—even better, Field Artillery (FA) and Air Defense Artillery (ADA) professionals—telling the story of the best branches in the Army and Marine Corps in the world.

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SSG Amaurys Rapozo, left, and 2LT James Jung, B Company, 2nd Battalion, 325th Airborne Infantry Regiment, 2nd Brigade Combat Team (2 BCT), 82nd Airborne Division, search the home of a suspected bomb-maker in Sha'ab, Iraq, 16 May 2007. (Photo by SGT Mike Pryor, 2 BCT, 82nd Abn Div Public Affairs)

ENHANCING THE TARGET'S EFFECT: CRIME SCENES IN IRAQ

By Captain Joshua P. Rowan, FA

It was 28 February 2007, and I was positioned along a wall outside a target house in Baghdad with my platoon. It was my first deployment and raid, and the adrenaline was flowing freely. The assault team breeched the outer gate, then the inner gate. There was a few more seconds of radio silence, then the call came over the radio that the target house was clear and secure. I walked into the house where all eyes were on me, waiting for my plan to exploit the house and process the high-value target (HVT).

At the Field Artillery (FA) schoolhouse at Fort Sill, Oklahoma, officers learn many useful things, but unfortunately sensitive-site exploitation (SSE) is a subject that is still foreign to many Artillerymen. In today's contemporary operating environment (COE), SSE is a necessary skill for all Soldiers, including Artillerymen. This article discusses the basics of SSE in a combat environment, but does not serve as the final word on the subject.

What is SSE? SSE is defined by the Federal Bureau of Investigation as, "a systematic search of a secure location which permits the collection of information leading to the development of tactical, operational or strategic intelligence and provides evidence that can be used in the prosecution and conviction of detainees."[1] Locations may include, but are not limited to, apartment buildings, residences, multiple structures, compounds, fields, traffic control points (TCPs), improvised explosive device (IED) sites or any combination of these.

Artillerymen of all stripes now are being asked to conduct this difficult and, often, foreign task in theater. Why? Beyond the obvious answer that Artillerymen have become a sort of "jack-of-all-trades" for the Army at large, Artillerymen are known for their trademark ability to adhere to rigorous

standards of precision—a must during the exploitation process.

A good SSE is conducted in as detailed and thorough a manner as time and the objective permits. This allows prosecutors to get convictions and keep those insurgents and terrorists off the streets. For example, between October and December 2004, the Central Criminal Court of Iraq reviewed 2,865 cases, and 2,118 cases were deemed "no prosecute" and sent to the US' Combined Review and Release Board which released the detainees. This means that the same individual detained one night could be back on the street several weeks later; a prospect that simply is unacceptable.

As one handout notes, "the more evidence you collect on the objective, the more chance that detainees will be detained for extended periods. The amount of evidence you collect determines, more than anything else, if the detainee will be sent to Central Criminal Court of Iraq … where, if convicted, they face up to 20 years imprisonment, or to the Combined Review and Release Board… where they are eligible for release in six months or less."[2]

Creating the SSE Team. Good SSE starts during preparation for deployment at home station. Some may argue that any platoon member can serve on the SSE team on a rotational basis. However, this does not facilitate the standard of precision that we have come to expect as Artillerymen. A good section chief would never think of rotating his seasoned gunner out before a fire mission. Why then would it be acceptable to rotate seasoned personnel on the platoon's SSE team?

At the battery level, the platoon leader designates the members of the SSE team. At a minimum, the following team members must be designated: SSE coordinator (usually the platoon leader), SSE team leader, a two-man search team, a photographer and a sketcher. A good general rule is that an SSE team should have no more than six, but no fewer than three members.

Within our platoon, we are limited on manpower but have an SSE coordinator, an SSE NCO-in-charge, one sketch artist and a two-paratrooper search team. As with any good battle drill, each team member has assigned tasks.

The SSE coordinator is responsible for the overall collection, analysis and processing of the intelligence gathered on the objective and choreographs all the "moving pieces" on the SSE team. On our SSE team, this individual also properly marks the rooms before beginning the SSE procedures and ensures that the chain of command is updated on the status of the SSE process.

The SSE team leader designates a consolidation point and initiates and monitors the SSE. This Soldier receives, screens and inspects all material for proper markings, making sure to enforce the unit's standard operating procedure (SOP) for marking evidence. He sends all status reports to the SSE coordinator.

The two-man search team receives guidance from the SSE team leader then conducts the search, screens materials and bags and marks all gathered materials. In each room, the team members consolidate their evidence at a predesignated point and move forward to the next room as directed by the SSE team leader. The photographer takes pictures of the evidence as it is collected.

If resources permit, a good interpreter should be dedicated to the SSE team. This individual can help with the on-scene analysis of documents, photos, technical manuals or electronics.

Most importantly, he can use his knowledge of the area and culture to tell the SSE team if something seems out of place. For example, one SSE instructor told a story about one unit's interpreter alerting his team to the fact that a particular room being searched was smaller than it should have been for a house that size. After further investigation, the team discovered that a false wall had been built. When the wall was removed, they found a large weapons cache.

Building the SSE Kit. Once the team has been established, an SSE kit must be developed. For those deploying who are lucky enough to attend an SSE class in theater, they will receive an exceptionally good SSE kit. Other teams have to build their SSE kits from scratch. A good SSE kit includes the items listed in the figure.

The SSE coordinator needs to ensure that "personal detainee bags" are constructed before leaving for a mission. These can be made by taping an arm's-length of 550-pound cord to the back of several ziplock bags and inserting a note card in the bag. The following categories should be included on each note card: objective name, date-time group, subject's name and contents of the bag.

After arriving in theater, the SSE coordinator should search out subject matter experts (SMEs) in his area of operations (AO). This can include individuals from explosive ordinance disposal (EOD), weapons intelligence teams, tactical human intelligence (THT), engineers and others. Three groups—Task Force Troy (available only on Secure Internet Protocol Net), the Center for Army Lessons Learned (CALL) (http://call.army.mil) and the Asymmetric Warfare Group (http://www.awg.army.mil)—have excellent websites that should be used. In addition, the SSE coordinator should begin working with the S2 shop to learn the enemy's most recent tactics, techniques and procedures (TTPs).[3] Armed with this information and organized with the proper equipment, the SSE team is ready for its first mission.

Conducting SSE. Once a platoon sergeant announces a house is clear and secure, including personal searches of all detainees, the SSE team can enter the objective. The first task is segregating any local nationals into three groups. If space permits, the team places all females and children in the first room, the target in the second room and all other personnel in a third room.

The platoon sergeant and several platoon members begin a thorough search of the outside yard using a metal detector to locate any weapons or IED materials.

- Simcard Reader
- Detainee Paperwork
- Document Protectors
- Medical Scissors
- X-Spray/Gun Shot Residue Test Kit
- Permanent Markers
- Shoe Tags
- Retainer Bands
- 550-pound Cord
- Chemlights (Different Colors)
- Headlamps
- Note Cards
- Small White Marker Board with Dry-Erase Markers
- Medical Gloves
- Memory Stick
- Digital Camera with Cord
- Flexible Ties
- Safety Pins
- Sketch Pad and Pencils
- Detainee Hoods or Desert Scarves
- Ziplock Bags
- Metal Detector
- Biometrics System
- Probe for Checking Trash

A good sensitive-site exploitation (SSE) kit includes these items.

All other Soldiers move to security positions outside. This allows the SSE team to move about the house without interference. The SSE team leader then takes the two-man search team and photographer to the first room to be processed. Preferably, they should process a room that is not occupied by detainees.

Simultaneously, the SSE coordinator and the sketch artist start at the front of the house and label every room using the platoon SOP. Our unit's SOP is to begin at the building's main point of entry. This becomes "Room A." The rooms are labeled with a black marker on the upper-right portion of the door frame in a left-to-right or clockwise manner.

When all rooms are marked properly, the sketch artist begins to draw the house's layout and label the rooms on his sketch. Once he has completed this task, he joins the search team.

At this point, the search team actively is conducting SSE on each room. Before beginning in each room, the SSE team leader ensures that everyone is wearing a fresh pair of medical gloves, preventing the SSE team from contaminating the evidence.

Each search-team member starts on a different side of the room and works his way around the entire room. Each searches low, medium and high, paying special attention for any false walls and floors, cutouts, items hidden in the wood, under rugs and above ceiling coverings. The team leader ensures that no one except the SSE coordinator enters the room while it is being exploited. This technique prevents distractions and allows the search teams to be as thorough as possible.

SSE team members must remember as they search that destructive behavior that does not uncover evidence is counterproductive. Teams should take time and search everything carefully, identify the necessary items to be removed and try to discover actionable, strategic intelligence rather than simply create a backlog for personnel at the detention facility.

Items of interest include passports, letters, pictures, phone lists, communication or navigation equipment, enemy forces propaganda (leaflets, books or pamphlets) and weapons or ammunition known or suspected to have been used in enemy activity against Coalition Forces or that are excessive in nature beyond personal protection.

When the team finds evidence, the photographer takes a picture of the item in the exact position and location where it was found. The SSE team leader then ensures the item is placed in a ziplock bag, along with a note card labeled with the objective name, room number, date-time group and contents of the bag. When conducting SSE at night or in minimal light conditions, placing a different colored chemlight in the bag for each room can facilitate easier identification. After a room is inspected thoroughly, the team members take all evidence to the predetermined consolidation point. Before leaving each room, the photographer takes one last photograph of the overall condition of the room.

The SSE coordinator then sends his situation report to higher headquarters and coordinates with one of the guards to move a set of detainees to the completed room while the remainder of the SSE team moves to the next room.

The team should not skip rooms. For example, if there are 10 rooms, searchers start at room one and finish at 10 or vice versa. The exploitation process is repeated in each room until the structure has been searched thoroughly. As the SSE team leader completes a room, he lines through the number written on the house layout sketch. This allows the SSE coordinator to track the exploitation's progress. As each room is searched, guards move another detainee or group of detainees into the cleared room. However, the guards do not move the detainees until THT has completed their questioning.

Once all rooms and personnel are exploited thoroughly, the SSE team sets up for a photo known affectionately as the "money shot." The team chooses a room with a big floor space and lays out all collected items and evidence on the floor. Each item is taken out of and placed on top of its respective ziplock bag. There must be enough space between items so that they can be identified easily by detainee inprocessing and law enforcement personnel. When all evidence is displayed properly, the photographer takes a photo of all the items, making sure there are no people in the photo.

The SSE team uses a small dry-erase board to write the key information about the detainee. At a minimum, the team should list objective's name, detainee's name, date-time group and grid on the board. Then the photographer places the detainee and completed board behind the evidence, clears all coalition personnel from the photo area and takes the final picture. It is recommended that the photographer takes several photos in case the original does not turn out.

Once all photos are taken, team members place each piece of the evidence back in its respective bag and pack all of the bags in some type of duffle or aviator's kit bag. The SSE team leader ensures that all personal items are removed from the detainee and placed in one of the premade "personal detainee bags" and placed around the detainee's neck. This bag must be labeled properly with the following categories: objective name, room number, date-time group and contents of the bag.

After clearing the objective and loading all detainees and evidence into vehicles, the platoon returns to the combat observation post (COP) or forward operating base (FOB). The SSE team writes sworn statements, does sketches and transfers all evidence and pictures to the intelligence section. The S2 section will have specific instructions on which forms are required.

As with every good Army operation, the final step is the after action review (AAR). This step may be the most critical step because SSE is a learning process that adapts and evolves based on new equipment and changes in the enemy TTPs.

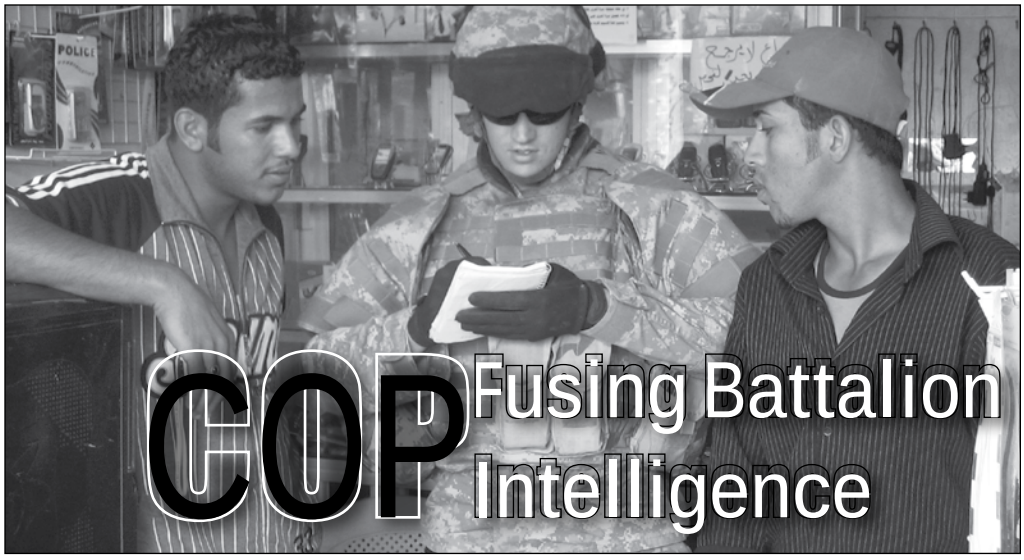
SSE teams that consistently and diligently conduct the basic steps of the process and follow each exploitation process with a thorough AAR will develop skilled team members who produce solid convictions.

Endnotes:

1. Federal Bureau of Investigation PowerPoint Briefing, June 2006.
2. Matt Coakley and John Hicks, *Soldier's Investigation Guide and Crime Tip Manual,* (Baghdad, Iraq: US Embassy), 3.
3. Junior Leader's Counter Insurgency (COIN) Academy, "Sensitive Site Exploitation (SSE) in COIN," PowerPoint Briefing, 31 October 2006.

Captain Joshua P. Rowan, Field Artillery (FA), is the Effects Coordinator (ECOORD) for 2nd Battalion, 319th Field Artillery (2-319 FA), 2nd Brigade Combat Team (BCT), 82nd Airborne Division in Iraq. He also was a Platoon Leader and Battery Fire Direction Officer (FDO) in 2-319 FA and Company Fire Support Officer (FSO) for 1-504 Parachute Infantry Regiment (PIR), 1st BCT, 82nd Airborne Division, Fort Bragg, North Carolina.

The author wishes to thank Sergeant Eric S. Meinhardt of 2nd Battalion, 319th FA, for his help in preparing this article.



COP Fusing Battalion Intelligence

SPC Lawrence A. Gard, 1st Battalion, 125th Field Artillery (1-125 FA), gathers information about local nationals for entry into the 1-125 FA's central database. (Photo by 1LT Douglas A. Borgeson, 1-125 FA)

During 1st Battalion, 125 Field Artillery's (1-125 FA's), Minnesota Army National Guard (MNARG), 2006-2007 deployment to Iraq, the primary mission of the battalion was to maintain the security of Convoy Support Center Scania in southern Iraq.

One of the tasks in the S2 section was to improve the quantity and quality of knowledge about the battalion's common operating picture (COP). Stored in a database, the knowledge then could be passed onto our relieving unit.

The challenge was a common one; many organizations store and distribute their COPs in slide shows that are scattered in various sections' locations on a file server. Storing COPs this way leads to inconsistent copies that have no record of age or original sources.

This article describes why and how we developed and used a comprehensive central database for battalion intelligence, which may help other units.

Our experience in developing a central database that allowed multiple users to read and edit simultaneously gave our Soldiers a database with easy access and more accurate information in our area of operations (AO). It also eliminated endlessly searching through other sections' information.

Designing. One of our guiding principles was that all reporting is flawed and out of date. So every database record was given a timestamp and a field to show the level of confidence in the information.

Cars, phone numbers, village information and personal data went into separate tables and were linked based on ownership and contact. This reduced the existence of inconsistent information**.** Every record linked back to its original report, also in the database.

We created our own database because existing systems were not designed for the type of data being stored. It was designed based on a common tool —Microsoft Access—to ease deployability.

The upside was that it would store the data we needed, but building the database cost manpower and prevented simple access to the powerful visualization tools of existing commercial applications. This is a classic problem that any in-house project runs up against—increased functionality usually means decreased compatibility.

Getting the data and then determining how to store it for easy retrieval involved setting up some basic rules. Our human intelligence (HUMINT) collection team provided a list of standardized spellings of Arab names improving the odds that we would discover when two separate subunits were talking about the same person.

Entering. Captured documents were fed into the database. The names of every person the patrols and sections met were entered into the database, except when we thought someone was a true transient and there was no chance of encountering him again or when there was strong suspicion of fake identification.

More than just the name of a new person was recorded. Photos and details about his home village, tribe and occupation were useful and helped determine whether two entries were really referring to the same person or not.

At the end of our tour, the database contained many captured documents, several thousand people's names and phone numbers and hundreds of cars' descriptions.The stored information proved useful for developing contacts and screening potential workers.

Accessing. Soldiers assigned to man traffic control points (TCPs) wanted to know as much as they could about the people they were inspecting, so they requested access more often than others.

The original intent was for all Soldiers on patrol to enter their reports directly into the system. This did not occur because many of the Soldiers perceived that the task's complexity outweighed the value of having the information at their fingertips and the Soldiers were not directed by the command to do so.

Although training slides helped the battery tactical operating centers (TOCs) and battalion staffs, the main solution was to have S2 members periodically sweep through the file server and ingest the information that other sections maintained. This allowed us to format and quality check everything. The timestamps and links to the original reporting made the quality checking less onerous.

Those needing the information were able to perform complex searches of the database categories for relationships between people, events and places.

The result of our efforts was a centralized and correlated store of organizational knowledge. Although the original goal of having sections push their knowledge into the system directly never was realized, all the sections were able to pull useful information from our database.

We handed the database off to the 1st Squadron, 73rd Cavalry Regiment, when our unit redeployed.

The right balance of disciplined data entry, user friendliness and command influence is key to building a database to provide easily accessible, critical information for battalion intelligence. Units must decide whether or not existing tools are sufficient before investing in developing their own. We made the trade-off for a less user-friendly tool that provided powerful and central access to our information.

Command emphasis is necessary to ensure that no matter what method is used, all sections and subunits effectively share their information. Successful execution can give the unit's Soldiers another tool for powering the emergence of the COP.

1LT Michael A. Raymond, FA
Assistant S2, 1-125 FA, Minnesota Army National Guard (MNARNG)

The Medal

The Distinguished Service Cross is awarded to a Soldier who, while serving in any capacity with the Army, distinguishes himself by extraordinary heroism involving risk to his life, yet not justifying the award of a Medal of Honor; while engaged in an action against an enemy of the US; while engaged in military operations involving conflict with an opposing/foreign force; or while serving with friendly foreign forces engaged in an armed conflict against an opposing armed force in which the US is not a belligerent party.

Distinguished Service Cross
First Lieutenant Walter B. Jackson

First Lieutenant (1LT) Walter B. Jackson, Field Artillery (FA), became one of nine Soldiers since the Vietnam War ended in 1975 to receive the Distinguished Service Cross (DSC) for extraordinary heroism in action.

Secretary of the Army Preston M. Geren presented the DSC—second in precedence to only the Medal of Honor for valor in battle—at a ceremony held in the Pentagon's Hall of Heroes on 2 November 2007.

A second lieutenant at the time of his heroic action on 27 September 2006, 1LT Jackson was cited for selfless courage under extreme enemy fire while serving as a company fire support officer (FSO) with Task Force Spartans of A Company, 1st Battalion, 36th Infantry (A/1-36 IN) in Al Anbar Province, Iraq.

On 27 September, 1LT Jackson engaged was in combat operations with his unit against insurgents. While attempting to recover a disabled vehicle, his unit came under heavy machine gun fire, resulting in several Soldiers being wounded. While applying first aid to a severely wounded comrade, 1LT Jackson was shot in the thigh. 1LT Jackson was rendered unconscious, but that did not stop him.

1LT Jackson's citation, in part, reads: "Upon regaining consciousness after being shot, Second Lieutenant Jackson alternated between returning fire and administering first aid to the Soldier. Second Lieutenant Jackson was hit again with machine gun fire as he helped carry his wounded comrade to safety, but he never faltered in his aid. Although his own severe wounds required immediate evacuation and surgical care, Second Lieutenant Jackson refused medical assistance until his wounded comrade could be treated. Second Lieutenant Jackson's selfless courage under extreme enemy fire was essential to saving another Soldier's life and is in keeping with the finest traditions of military service..."

Before the presentation, Lieutenant Colonel Thomas C. Graves, former task force commander, recounted part of the day he arrived at the medical aid station to visit his wounded Soldiers. Graves said that the first words from the lieutenant were about his concern for the wounded Soldiers he'd rescued.

"All the leadership schools, classes and years of experience never really prepare you for that moment in time when you are standing among heroes who have given their all, where their first concerns still remain with their fellow Soldiers," Graves said. "It reinforces duty and commitment unlike any other experience."

After Secretary Geren made the award presentation, 1LT Jackson spoke to the packed room, humbly thanking his family, his West Point classmates and the Soldiers he's served with in his short two-year career and saying simply, "I believe I just had to do what I had to do in that situation...I think many Soldiers would have done the same thing."

1LT Jackson recovered from his wounds at Walter Reed Army Medical Center (WRAMC), after undergoing more than a dozen surgeries. While recovering at WRAMC, he volunteered as an intern with the Judge Advocate General's office. He now is a Platoon Leader for A/1-38 FA, 210th Fires Brigade, 2nd Infantry Division, in Korea.

Editor's Note: *Maneuver units in Operations Iraqi Freedom and Enduring Freedom are using FA teams to serve in a variety of unconventional roles to accomplish the dual role of precision fires and as an auxiliary to maneuver units. So, like many FA lieutenants in theater today, First Lieutenant (1LT) Jackson served as an FSO, targeting officer, company battle captain, intelligence officer, Iraqi Army liaison and personal security detachment for the commander during his deployment. 1LT Jackson personifies the Army's and Field Artillery's Pentathlete.*

Fires would like to acknowldge J.D. Leipold, Army News for his contributions to this article.

Silver Stars Awarded for OIF Actions

The Medal

The Silver Star is awarded to a Soldier who, while serving in any capacity with the US Army, is cited for gallantry in action against an enemy of the US while engaged in military operations involving conflict with an opposing foreign force, or while serving with friendly foreign forces engaged in armed conflict against an opposing armed force in which the US is not a belligerent party.

Captain (CPT) Charles E. Branson received the Silver Star Medal for gallantry in action for heroism in connection with military operations against a hostile force in support of Operation Iraqi Freedom. CPT Branson distinguished himself while serving as the Commander of A Battery, 1st Battalion, 3rd Air Defense Artillery (A/1-3 ADA), during the battle for Objective Jenkins from 24 to 29 March 2003.

CPT Branson's orders were to secure a bridge near the village of Al Kifalin to enable the brigade to continue its attack. For this mission, in addition to his two Bradley Linebacker platoons, he received a tank platoon from 3-69 Armor as a reserve, a combat observation lasing team (COLT) and a Long-Range Acquisition System (LRAS) team. An Air Defense battery commander leading a Bradley and tank company team in an attack is unprecedented.

Just after midnight on 25 March 2003, CPT Branson's team reached the bridge and immediately received heavy rocket-propelled grenade, small arms and mortar fire. He pulled his forces back and called for Artillery fire to suppress the enemy. He rallied his forces and continued the attack, receiving additional heavy fire. For the next eight hours, CPT Branson continued the attack, calling for artillery fires on three separate occasions and requesting the commitment of the reserve tank platoon, which occurred at 0800 on 25 March 2003.

When Iraqis blew the bridge, CPT Branson ordered his tanks to cross the weakened structure. This action turned the tide of the battle—following additional fire and maneuver, his company team secured the bridgehead, but fierce fighting continued for the next 36 hours. The enemy battle damage assessment for this operation included more than 200 enemy soldiers, 20 technical vehicles and the identification of numerous weapons caches.

Sergeant First Class (SFC) Matthew T. Gruidl received the Silver Star Medal for gallantry in action for heroism in connection with military operations against a hostile force in support of Operation Iraqi Freedom. SFC Gruidl distinguished himself while serving as Platoon Sergeant of 2nd Platoon, A Battery, 1st Battalion, 3rd Air Defense Artillery (2/A/1-3 ADA) from 27 January to June 2003.

On 22 March 2003, Task Force 2-7 Infantry made contact with Iraqi forces in As Samawah. SFC Gruidl, without orders, volunteered to reestablish link up for the lost and separated portion of TF 2-7 convoy that was receiving small-arms fire. With complete disregard for his own safety, he exposed himself to hostile fire, while using his vehicle to shield the lost convoy against sporadic AK-47 fire as he led the convoy out of the hostile area, taking numerous small-arms rounds to his vehicle and himself, to link up with the remainder of the TF 2-7.

On 24 March 2003, A Battery made contact and was ambushed by a large Iraqi force while securing Objective Jenkins. SFC Gruidl engaged numerous hostile forces while leading 2nd Platoon through the ambush.

The next day, SFC Gruidl approached four Iraqi soldiers hiding in a ditch. The Iraqi soldiers immediately exited the ditch, and one ran around the rear of the platoon leader's truck. One of the Iraqi soldiers leapt onto the platoon leader's vehicle. SFC Gruidl exposed himself to direct fire and engaged the Iraqi with a burst of .50-caliber rounds that removed the Iraqi soldier, ultimately saving the lives of the three-man crew.

CPT John F. Vanlandingham received the Silver Star Medal for "exceptional meritorious bravery" for actions that saved the lives of several Iraqi National Guardsmen. He distinguished himself while assigned to 1st Battalion, 206th Field Artillery (1-206 FA), Arkansas National Guard, serving as an Advisor to the Iraqi National Guard, in support of Operation Iraqi Freedom.

CPT Vanlandingham's mission was to train Iraqi National Guard troops to defend their country. On 14 November 2004, he was leading a convoy from an oil refinery back to a US area of operations north of Taji, Iraq, including about 50 Iraqi National Guard troops in several vehicles that had no protective armor, making the vehicles and occupants susceptible to improvised explosive devices (IEDs).

Two IEDs exploded, signaling an ambush, and several insurgents began attacking with small-arms fire. CPT Vanlandingham's vehicle, the convoy lead, escaped the ambush and motored to safety, but he and the troops with him immediately realized that the Iraqi soldiers were caught in the attack.

CPT Vanlandingham directed American forces to suppress the enemy fire as he made his way into a ditch and back toward the Iraqi troops, retrieving several wounded and at least one dead Iraqi soldier along with several weapons. After accounting for all personnel, he reorganized the convoy, leading the way back to the US area of operations to secure medical treatment for the wounded. The Iraqi troops had suffered severe injuries, and without quick medical attention, they likely would have died.

Without regard to his own personal safety, CPT Vanlandingham's actions saved the lives of several Iraqi National Guard soldiers. He is the third Arkansas Guardsman to earn the Silver Star while deployed in support of Operation Iraqi Freedom.

Vietnamization—Operations into Cambodia

I would encourage all Field Artillerymen to read this excerpt from General Ott's treatise, "The Field Artillery in Vietnam." It was not only an important and detailed account of that particular conflict, but it also offers lessons applicable to our current era of persistent conflict. The value of fire support and Field Artillery leaders remains a cornerstone to the combined arms team and cannot be overstated.

I would like feedback from the field to know how these historical lessons learned apply, if at all, to your current situation. Email the *Fires* Bulletin at firesbulletin@conus.army.mil with your thoughts.

Major General Peter M. Vangjel
Chief of Field Artillery (FA)
Commanding General, FA School and Fort Sill

General Ott's Introduction to the Series. *This monograph illuminates some of the more important activities—with attendant problems, shortcomings and achievements—of the US Army Field Artillery in Vietnam.*

Although based largely upon documents of a historical nature and organized in a generally chronological manner, this study does not purport to provide the precise details of history. Its purpose is to present an objective review of the near past in order to assure current awareness of the lessons we should have learned and to foster the positive consideration of those lessons in the formulation of appropriate operational concepts.

My hope is that this monograph will give the reader an insight into the immense complexity of our operations in Vietnam. I believe it cannot help but also reflect the unsurpassed professionalism of the junior officers and NCOs of the Field Artillery and the outstanding morale and esprit de corps *of the young citizen-soldiers with whom they served.*

By Major General David E. Ott, Commandant of the Field Artillery School, 1973-1976

Although commanders throughout Vietnam were placing primary emphasis on Vietnamization and the structure of the program was taking shape, the American effort and the Vietnamese forces' ability to absorb the mission had not had a significant test. The vehicle through which the Vietnamese fighting potential could be tested and its progress more reliably gauged was approaching rapidly in the spring of 1970.

The sanctuaries and base areas established by the Communist forces along the South Vietnam-Cambodia boundary long had been a frustrating irritant to both American and Vietnamese military leaders. (See Figure 1 on Page 34.) Although the occupation of these areas by the North Vietnamese was a flagrant violation of Cambodian neutrality, the position taken by Prince Sihanouk and his government made it impossible to conduct operations across the border in an effort to deny the enemy the free use of these sanctuaries.

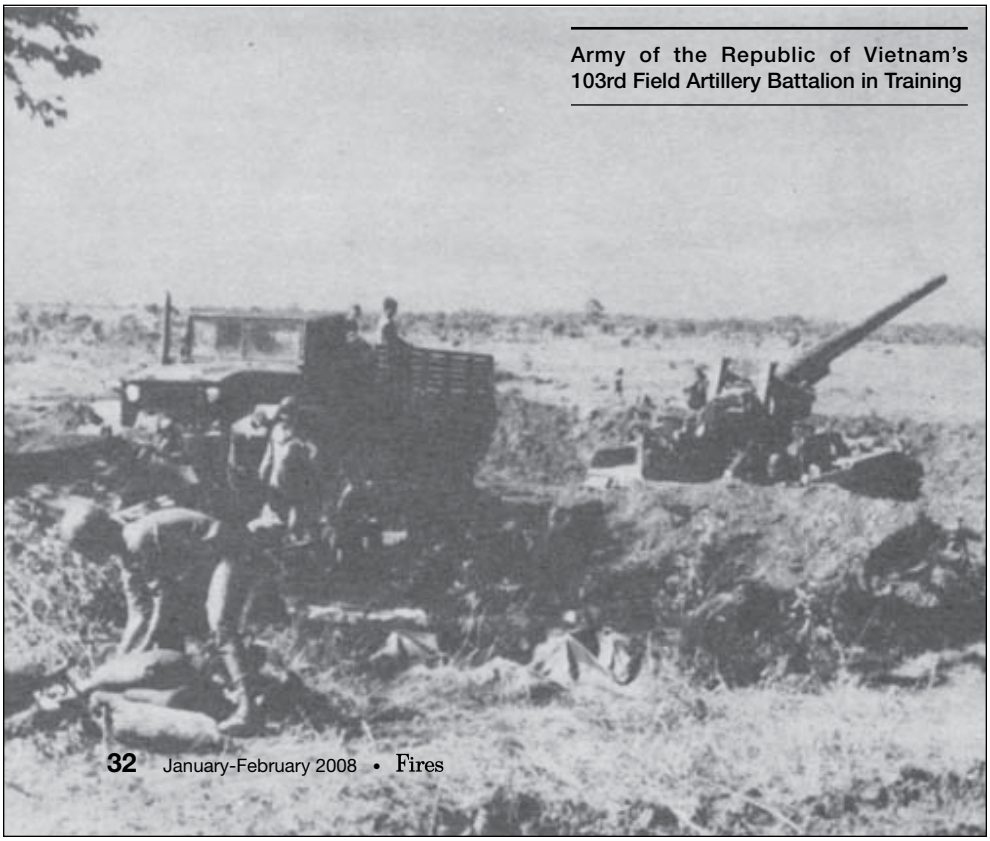
Sihanouk's neutrality was flexible, ranging from open hostility toward South Vietnam and her allies to a more agreeable tolerance of the North Vietnamese and the Viet Cong. Over the years, this tolerance permitted the establishment and maintenance of these base areas.

In the spring of 1970, the political atmosphere in Cambodia changed drastically and erupted into a violence that culminated in the overthrow of the Sihanouk regime. With the formation of the Lon Nol administration, the Cambodian government's attitude changed completely; its hostility was directed away from the South Vietnamese and against the Communists. This reversal of position made possible the subsequent incursions into Cambodia.

Intelligence reports had been indicating a massive logistics buildup in the Cambodian sanctuaries in the Military Region III area for some time. Evidence was strong that the Communists were planning a major offensive—possibly similar in intensity to the 1968 *Tet* offensive. In addition, military intelligence had pinpointed the location of the Central Office of South Vietnam (COSVN), the major North Vietnamese headquarters for South Vietnam, in the "Fish Hook" region of Cambodia.

The intent of the Cambodian incursion was to forestall an enemy offensive, despoil the sanctuaries and, if possible, capture COSVN. At the same time, achieving these objectives would disrupt Communist plans and capabilities so that the Vietnamization program would benefit greatly from the time gained.

Initial Penetrations into Cambodia. South Vietnamese operations into Cambodia commenced 14 April 1970 with several limited penetrations into the "Angel's Wing" area. These penetrations were followed by a major Vietnamese



Army of the Republic of Vietnam's 103rd Field Artillery Battalion in Training

thrust launched on 29 April. Operation Toan Thang 42 (Rock Crusher) was initiated by the Vietnamese III Corps attacking with three task forces into the Angel's Wing area and then south into the "Parrot's Beak" area of Cambodia.

Each task force was supported by one battery of 105-mm howitzers, augmented by US self-propelled medium artillery as needed. The II Field Force Artillery supported the attack with six batteries of medium and heavy artillery, initially deployed to the north and east of the area of operations to provide maximum support for the maneuver units. To ensure timely support further, liaison was established with all Vietnamese task forces, III Corps and IV Corps. All US artillery fires in Toan Thang 42 were coordinated and controlled by a forward element of the 23rd Artillery Group, which was collocated with the Vietnamese III Corps tactical operations center at Go Dau Ha (later at Tay Ninh).

During the latter phases of this operation, two medium and two heavy batteries displaced into Cambodia to keep pace with the rapidly moving Vietnamese forces. These batteries provided close and continuous support to the maneuver elements but were not allowed to displace west of Svay Rieng, the westernmost limit of the politically imposed US operational boundary.

Incursion into the Fish Hook Area. On 27 April, the 1st Cavalry Division was given the mission of planning and executing a campaign to eliminate the North Vietnamese base areas in the Fish Hook region of Cambodia. To accomplish this mission, elements of 11th Armored Cavalry Regiment (ACR) and the Vietnamese 1st Airborne Division were placed under the operational control (OPCON) of the 1st Cavalry Division. Task Force Shoemaker was formed to carry out the attack.

The maneuver plan was simple and direct. The Vietnamese 1st Airborne Division's 3rd Brigade would occupy blocking positions north of the objective area, and elements of the 1st Cavalry Division and the 11th ACR would make a four-pronged attack from the south. Artillery would be provided from all the elements involved in the attack, and additional fire support would come from II Field Force Artillery units.

The fire support available was formidable and included the largest concentration of artillery, tactical airstrikes and B-52 strikes committed in support of an operation of this size in Vietnam. The fire support coordination planning required to support the operation was extremely complex and detailed. Initially, targeting information was limited; however, after the operation was approved, additional information became increasingly available from II Field Force and Military Assistance Command sources. After the basic fire support annex and artillery fire support appendix were prepared, detailed coordination of fires with other fire support assets was conducted. Care was taken to ensure that the various fire support agencies did not interfere with each other, times-on-target were adjusted to ensure flight safety for ordnance-carrying aircraft and definitive air corridors were established.

Ninety-four cannon artillery pieces were positioned to support the initial phases of the attack: 36 105-mm howitzers, 48 155-mm howitzers, four 8-inch howitzers and six 175-mm guns. By 30 April (D-1), the II Field Force heavy and medium artillery, the direct support (DS) Artillery for the 3rd Brigade, 1st Cavalry Division and one Vietnamese airborne Artillery DS battery were in position and prepared to support the operation.

At 0600 on 1 May, D-day, an extensive 390-minute planned artillery and air preparation was initiated, and a total of 2,436 artillery rounds was fired. These fires were integrated effectively with 48 tactical airstrikes to complete the D-day preparation. The total fire support delivered for D-day operations included 185 tactical air sorties, 31 B-52 missions and 5,460 artillery rounds.

During the period 2 to 5 May, the detailed fire support planning paid handsome dividends as many lucrative targets were engaged. The heavy concentration of cannon artillery and flexible fire support coordination allowed fires to be massed again and again with relative ease.

Artillery moves to support advancing friendly forces began on 2 May and subsequently were made whenever necessary to ensure continuous artillery coverage. The II Field Force Artillery units alone moved 198 times during the 60-day operation to maintain pace with the maneuver forces.

With the initiation of Operation Toan Thang 45 (northeast of Bu Dop by the 2nd Brigade, 1st Cavalry Division; in Base Area 354 by elements of the US 25th Infantry Division; and, in Base Area 350 by the Vietnamese 9th Regiment), fire support coordination activities were expanded but did not change significantly from the smooth-functioning procedures previously established.

Positioning II Field Force Artillery units centrally and well forward had facilitated the support of the additional maneuver units as they attacked into Base Areas 354, 707, 350 and 351. (See Figure 1.) Except for a few batteries located in critical areas of III Corps, virtually all remaining units of II Field Force Artillery were moved to the Cambodian border or across it. During one three-day period, 32 artillery moves were conducted to place the firing elements in the best positions to support the expanded operations.

During the withdrawal phases of both Toan Thang 43 and Toan Thang 45, extraction support plans were formulated to derive maximum benefit from all available fire support. The purpose of these plans was to deny the enemy access to the extraction sites and air corridors. Each DS Artillery battalion planned the extraction fires for the supported brigade, and the division fire support coordination center cooperated closely with the Vietnamese airborne division artillery commander to establish the fire scheme for the withdrawal of the Vietnamese forces.

These plans were so effective that continuous fire was maintained around the extraction sites and air corridors during the entire operation. By 1800 on 29 June, all American units were withdrawn from Cambodia.

At the same time that the well-publicized campaign across the Cambodian border was kicking-off in the Military Region III area, the 4th Infantry Division, located in the central highlands of the II Corps Tactical Zone, received a warning order to be prepared to conduct operations across the border into Base Area 702. The mission was to locate and destroy enemy resources, installations and command facilities.

Planning was initiated immediately for the two-brigade assault. Fire support was provided by division Artillery units reinforced by medium and heavy elements of the 52nd Artillery Group. Division artillery established a forward tactical command post at New Plei Djereng and developed the fire support plan for the operation, called Binh Tay I.

Because South Vietnamese elements were involved in the operation, it was necessary to form the additional liaison parties to support Vietnamese units. A special fire support team was established with Special Forces and civilian irregular defense group units to ensure timely clearance of fire requests.

Firing units were positioned in forward areas on 4 May to facilitate joining the maneuver forces and reduce the time required to lift the units into the selected fire support bases. With one exception, all Artillery units remained in their initial positions throughout the Cambodian operation.

Although Artillery support of the operation was adequate, ammunition resupply problems hampered the total effectiveness of the firing units. A temporary ammunition supply point was established at New Plei Djereng; however, its stockage was not in accord with the recommended stockage objective. A critical shortage was avoided only because the initial combat assaults of the maneuver forces were delayed one day.

Although significant amounts of materiel were captured and destroyed, Operation Binh Tay I was less than a total success. Because of other commitments and operational requirements in II Corps, 4th Division elements were withdrawn 10 days after the operation started and substantial areas were left unexploited. The lack of air assets, Artillery resupply problems and heavy initial contact severely hampered the efficiency of the operation. Although Vietnamese forces continued to operate until 25 May, the major tactical effort was complete with the withdrawal of the 1st Brigade units on 16 May.

The Cambodian incursion was an overwhelming success in materiel captured or destroyed. During the two-month assault, friendly units expended 847,558 rounds of which 261,039 were fired by Vietnamese artillery units.

The Cambodian operation measured in terms of Vietnamization revealed continuing weaknesses in Vietnamese fire support techniques. Vietnamese artillery was not employed to its full effectiveness by task force commanders. Repeatedly, these commanders waited too long for tactical air, gunships and light fire team support when DS Artillery was within range and ready to provide immediate fire. Task force commanders called for tactical aircraft and light fire team strikes without regard to the nature of the target being engaged. Light fire teams often were called to engage well-fortified positions—targets better suited for artillery engagement. This failure to engage the enemy expeditiously materially reduced the effectiveness of the combat mission.

Often, Vietnamese artillery liaison officers and forward observers were not used properly.

On many occasions the maneuver element commanders personally adjusted artillery fire and Vietnamese Air Force airstrikes, although trained observers were available. On several occasions,

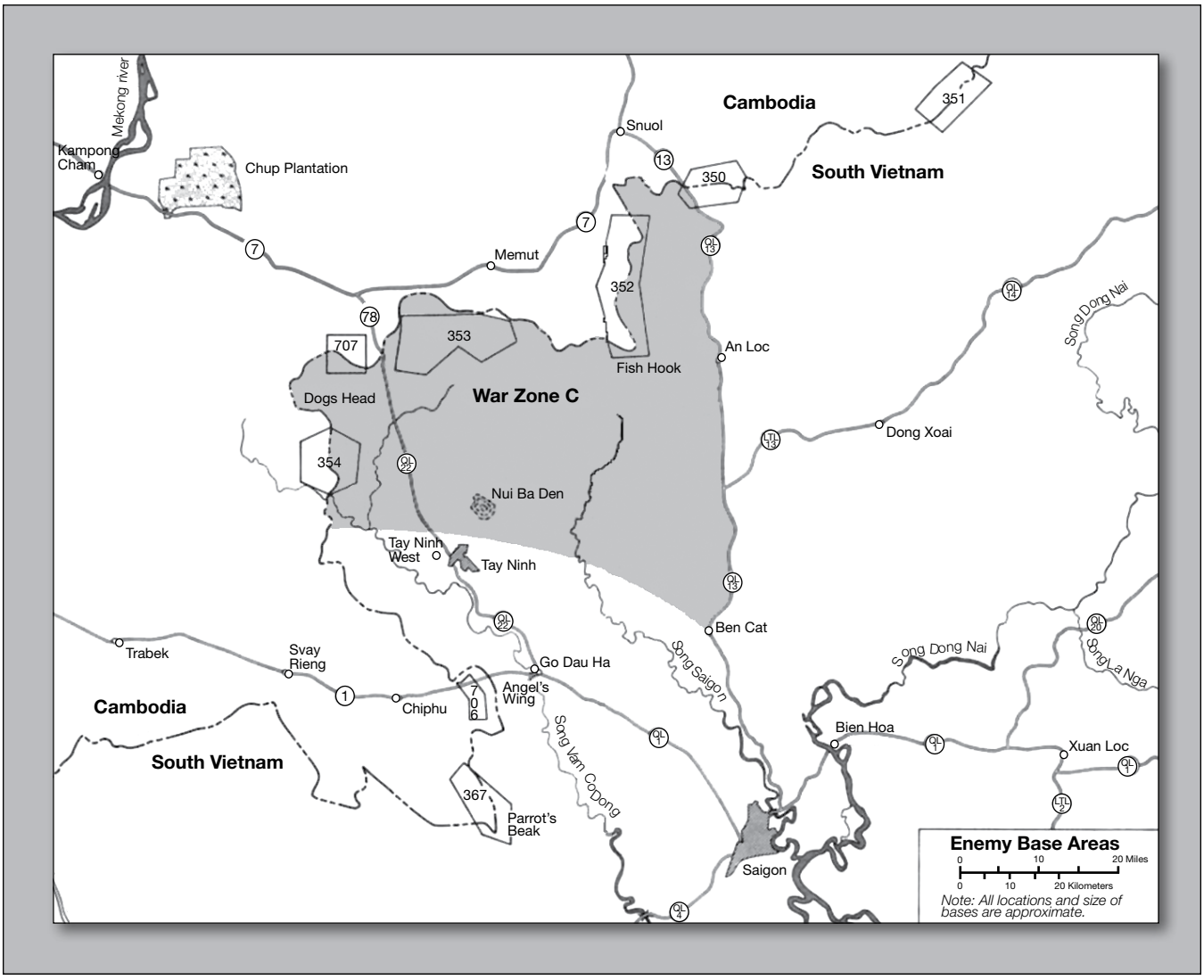


Figure 1: Map of Communist Sanctuaries and Base Areas Along the South Vietnam-Cambodia Border

Vietnamese fire support officers were intimidated by their supported unit commanders to the extent that they would not approach the commanders with recommendations on the use of artillery. These failings resulted in lowering the effectiveness of the fire support and removed the commanders from their more immediate responsibilities of command.

In addition, some coordination and liaison problems emerged between US and Vietnamese forces. These problems were most acute whenever US units were under OPCON of Vietnamese commands, and difficulties manifested themselves in displacement, emplacement and security arrangements. At times, slow reaction by the Vietnamese headquarters responsible for target clearance matters hampered the American Artillery units' abilities to provide responsive fire support to elements in contact.

One of the most significant successes of the Cambodian incursion was really a byproduct of the action. With Vietnamese troops committed in such large numbers to the operation, territorial security became the primary responsibility of the Regional and Popular Forces. Their reaction to the challenge was surprisingly good, and more importantly, the confidence they gained from their successes served as a valuable psychological boost.

Toward Vietnamese Self-Sufficiency. With the termination of the Cambodian operation, primary attention was returned to Vietnamization. The performance of Vietnamese units during the Cambodian fighting was scrutinized carefully, their strengths and weaknesses were analyzed and emphasis was placed on those areas needing improvement. It also became apparent that the ability of the Army of the Republic of Vietnam (ARVN) artillery units to support maneuver forces adequately was substandard.

Although the deployment of territorial artillery, as projected and approved by Military Assistance Command, was considered the ultimate answer, it was evident that, because of the physical limitation of training and equipping them, these platoons could not deploy rapidly enough to release Vietnamese artillery units to provide standard tactical support. At the same time, the redeployment of American Artillery was progressing so rapidly that the "repositioning tactic" employed earlier in the year was losing its validity. It became apparent that immediate stopgap measures were required.

More and more senior Artillery commanders admitted that the platooning of American Artillery for extended periods of time to increase area coverage was the best solution. Though it had been common practice in Vietnam to separate US batteries into platoon positions, the practice had been viewed as a short-term expedient only.

In the fall of 1970, Brigadier General Thomas J. McGuire, I Field Force Artillery commander, summed up the feeling of most Artillery commanders when he said, "…even though US Artillery is prepared to respond rapidly by moving and shooting to destroy the enemy, we are prepared to replace ARVN artillery platoons and batteries which are on LOC [lines of communication] missions so that these ARVN batteries may move with the ARVN maneuver elements and support them on operations."

This tactic became standard procedure for American Artillery units during the latter phases of the war. It also magnified the myriad problems that had plagued Vietnamese artillerymen when they platooned their guns. US commanders found that the problems—command and control, technical proficiency, maintenance and apathetic personnel—they had attributed to the "personality" of the Oriental were, in fact, the result of the fragmented employment of artillery units. Diminishing assets made logistical support of these subunits difficult; the lack of qualified fire direction personnel limited the efficiency of the platoons; the absence of well-defined missions caused morale problems; and battery commanders were often out of touch with major parts of their units.

To offset diminishing long-range fire capabilities, heavy artillery raids were planned and conducted frequently. These raids normally were coordinated—the targets were carefully planned, the ammunition was fired quickly and the guns were returned to their normal positions.

By the end of the year, the Vietnamese artillery posture had increased substantially and further deployments were planned. A total of 1,116 tubes were providing artillery support throughout the country.

With the approval of Project Enhance in the fall of 1970, XXIV Corps was directed to prepare a comprehensive training program for presentation to cadre personnel of the 101st Artillery Battalion, the first Vietnamese 175-mm gun unit scheduled for activation. Corps Artillery began this mission by carefully scrutinizing the composition of the proposed unit to ensure that each facet of 175-mm gun employment received sufficient coverage in the program of instruction.

Added emphasis was placed on maintenance as this was to be the initial experience of ARVN forces with self-propelled artillery. Meteorological (Met) training received special consideration because, by TOE [table of organization and equipment], the Vietnamese gun battalions were assigned Met teams. Fire direction and firing battery procedures were taught at Fire Support Base Carroll, Met was taught at Fire Support Base Nancy, and driver and maintenance procedures were taught at numerous locations throughout Military Region I. Although instruction was conducted by the newly trained cadres, American experts were available to supervise and advise as necessary. Deployment of the first 175-mm gun unit was scheduled for July-August 1971.

The year 1971 brought another shift in the Vietnamization concept. Since the promulgation of the Vietnamization program in November 1969, the basis for Vietnamization had been training programs and combined operations conceived and controlled by Americans. By 1971, the American troop strength in Vietnam had been halved, and it became apparent that the capability of US units to support training programs directly was diminishing rapidly.

At the same time, American commanders felt that if Vietnamese forces were to become self-reliant, they would have to provide the training impetus for themselves. Assistance was offered only as needed and required. This shift in policy produced some hopeful indications as the Vietnamese began to assume the initiative in meeting most of their requirements.

In 1971, Military Assistance Command reviewed the Vietnamization program and divided it into three phases. (See Figure 2 on Page 36.)

Although these phases were stated rather definitively, work was being done in both Phases I and II because it was impossible to achieve any success in the first phase without substantial gains in the second.

Having examined and approved the feasibility of providing self-propelled 175-mm guns to Vietnamese forces, Military Assistance Command began studies relative to the turnover of self-propelled

155-mm howitzers. The concept called for the activation of three battalions armed with the M109 howitzers.

The study was continued until 23 August 1971, when General Abrams informed General Vien, Chief of the Vietnamese Joint General Staff, that the activation of the three new battalions was not feasible and that "…introduction of this new weapon into ARVN will overtax the training base and the logistics system, which is not now prepared to cope with the maintenance difficulties presented by this weapon…"

Operation Lam Son. Meanwhile, in January 1971, US and ARVN commands planned an operation across the border into Laos from Quang Tri Province in northern Military Region I. Both US and South Vietnamese intelligence estimates strongly had indicated that the enemy was preparing to conduct an intensified resupply and reinforcement operation in southern Laos as well as to build up supplies and equipment in Military Region I. Sources estimated enemy strength across the Quang Tri Province border to be 13,000 line and 9,000 support troops. In view of the successful Cambodian sanctuary operations of 1970, the logical tactical follow-up would be an effort to disrupt North Vietnamese supply and reinforcement operations.

The operation, termed Lam Son 719 and commanded by the commanding general of the Vietnamese I Corps, did not call for the employment of American ground forces in Laos. However, US air assets augmented the South Vietnamese Air Force in supporting ground operations. To permit a greater Vietnamese effort, American ground units provided extensive ground support in northwestern Quang Tri Province.

- Phase I: Turn over ground combat responsibilities to the Republic of Vietnam Armed Forces.
- Phase II: Develop air, naval, artillery, logistics, and other support capabilities of the Republic of Vietnam Armed Forces to the degree that effective independent security can be maintained.
- Phase III: Reduce the American Artillery presence to a military advisory mission and, finally, withdraw as the South Vietnamese become capable of handling the Communist threat without US military assistance.

Figure 2: The Three Phases of the Vietnamization Program

- Phase I: US units would open fire bases in Khe Sanh Plateau and secure Route 9 as well as staging areas and Artillery positions from which to support subsequent operations.
- Phase II: Vietnamese forces would attack into Laos on three axes, with the major axis along Route 9. Attacks would carry no further west than Tchepone, about thirty kilometers into Laos.
- Phase III: Gains would be consolidated.
- Phase IV: Friendly forces would be extracted.

Figure 3: Four Phases of Operation Lam Son 719 in the Quang Tri Province

US and Vietnamese forces estimated a four-phase offensive. (See Figure 3.)

Planning for the employment of US Artillery to support Phase I was extensive. Although ARVN maneuver units had their own light and medium artillery, they needed augmentation by heavy US Artillery operating from the border. To this end, fire support was planned between the I Corps fire support element and the XXIV US Corps fire support element through I Corps Artillery, the I Corps G3 and the I Corps Artillery adviser. In addition, plans included coordination with the 108th US Artillery Group, the control headquarters for heavy US Artillery.

The 108th Artillery Group consisted of the 8th Battalion, 4th Field Artillery, and the 2nd Battalion, 94th Field Artillery, each with four 8-inch howitzers and eight 175-mm guns, as well as Battery B, 1st Battalion, 39th Field Artillery, with four 175-mm guns. The 4th Battalion, 77th Aerial Field Artillery, 101st Airborne Division, also was available to support the operation and, being an air asset, was not restricted by borders. Three 175-mm batteries and one 8-inch battery were situated along the Laos-Vietnam border. The remaining batteries were set up in the Khe Sanh area.

Phase I, dubbed Operation Dewey Canyon, proceeded without a significant hitch. However, subsequent phases, which were to be conducted primarily by Vietnamese forces, went awry. Plans called for the Vietnamese 1st Airborne Division to conduct an airmobile attack all the way to Tchepone. At the same time, the Vietnamese 1st Armored Brigade was to attack along Route 9, southeast of Khe Sanh, and link up with the airborne division to open up necessary supply lines.

Unfortunately, the armored brigade did not fulfill its mission. It neither could advance with sufficient speed to provide a timely linkup nor keep the route to its rear open. Supplies to the airborne force had to be moved by air against intensive enemy antiaircraft fires.

The consolidation phase ended quickly, and extraction began in haste. Enemy pressure forced the abandonment of equipment, including artillery pieces.

Notwithstanding the loss of equipment, statistics were quite impressive in favor of Vietnamese forces. Over 19,360 enemy were killed in action whereas ARVN forces sustained 1,749 killed.

In terms of Vietnamization Lam Son 719 again pointed out Vietnamese weaknesses, particularly the inability of units to coordinate fire support.

Major General David E. Ott was the Commandant of the Field Artillery School, Chief of Field Artillery and Commanding General of Fort Sill, Oklahoma, from 1973 until 1976. At that time, he became the Commanding General of VII Corps in Germany, retiring as a Lieutenant General in 1978. During his career, he was the Director of the Vietnam Task Force for the Secretary of Defense, Washington, DC; Commanding General of the US Army in Thailand; Field and Air Defense Artillery Branch Chief and then Field Artillery Branch Chief, Washington DC; Commander of the 25th Infantry Division Artillery in Vietnam, the same division in which he served as a Battalion Executive Officer and S3 during the Korean War; and Commander of an 8-inch howitzer battalion in V Corps Artillery, Germany. General Ott is the author of the book *Field Artillery, 1954-1974.* He died 21 June 2004 from Legionnaire's disease at the age of 81.

Editor's Note: *This article was selected for reprint because of its discussion of the techniques used in helping the Vietnamese become self-sufficient. It discusses challenges Artillerymen faced in 1970 that might provide insight for Artillerymen in 2008 in the War on Terrorism.*

This article, including photo and map, is the second half of "Part VI: Vietnamization" of a monograph about the role of Field Artillery in Vietnam (Parts I through VII) published in a series of 14 articles by General Ott from the January-February 1975 through the March-April 1977 editions. With a few alterations to increase clarity, this article is a reprint of the original published in November-December 1976 Field Artillery.

The entire series is online at the Field Artillery *magazine's website, sill-www.army.mil/famag/.*

Fires AUTHOR'S GUIDE

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In addition to articles, we routinely print the Chief of Field Artillery's/Chief of Air Defense Artillery's column (Fires—Mud to Space), letters-to-the-editor (Fires from the Field); interviews with Army, Marines, joint and combined leaders; and other features.

1LT Rory McGovern, E Company, 2nd Squadron, 5th Cavalry Regiment (E/2-5 CAV), Fire Support Officer, left, conducts tactical questioning near Abu Ghraib in April 2007. See McGovern's article on Page 14. (Photo by CPT Lawrence Obst, E/2-5 CAV)

Subjects. Articles may cover the tactical, operational or strategic levels of military operations as long as their contents relate to FA, ADA, joint or coalition fires and effects or are of special interest to our readers.

If an author is writing about the past, he should analyze the events and show how they apply to the FA and or ADA professional today—not just record history. If he's identifying current problems, he must propose solutions. (An author may identify problems without proposing solutions only in a letter-to-the-editor.) In addressing the future, he should clearly explain his points and their implications.

One of *Fires'* objectives is to serve as a forum for professional discussions among the FA, ADA and fires community members. Therefore, an author's viewpoint, recommendations or procedures don't have to agree with those of the Branches, Army, Marine Corps or DoD. But the article's contents must be logical and accurate; address disadvantages as well as advantages (as applicable); promote only safe tactics, techniques and procedures (TTPs); and include no classified or operational security (OPSEC) information.

An article must be clear and concise with its thesis statement (bottom line) up front and the body of the article systematically contributing to the thesis. When writing, an author must think like the FA and ADA professionals in the field: "What is it?" "What will it do for me?" and "How do I implement it?" (or "When will I get it?").

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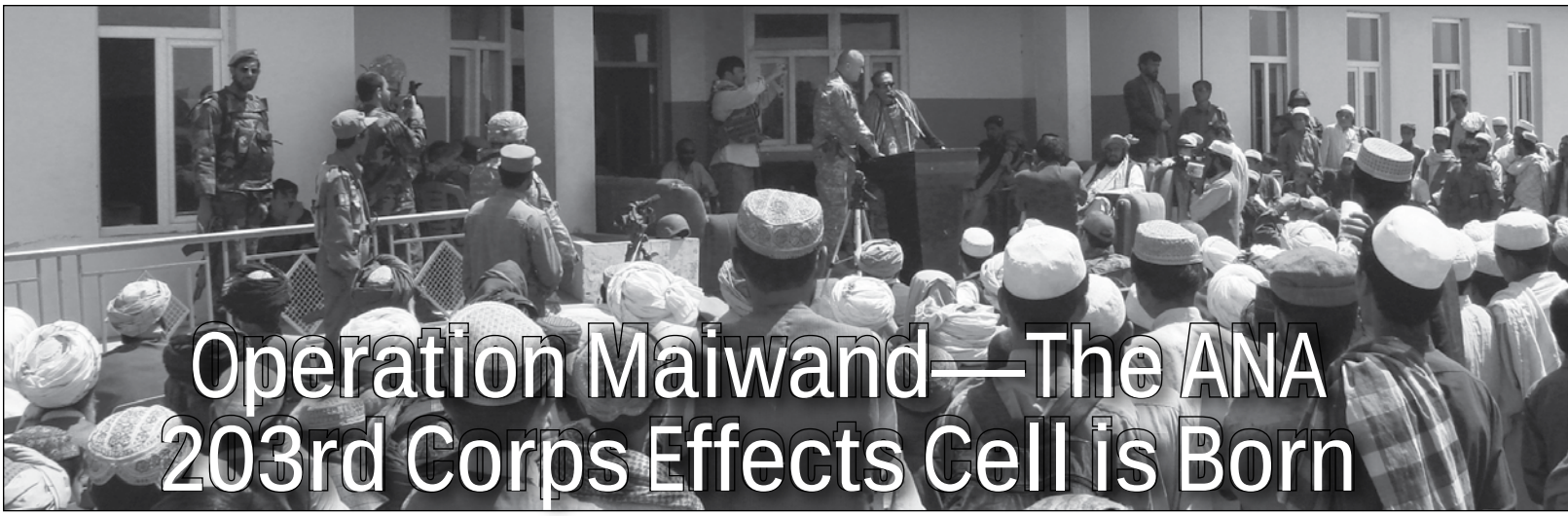


Operation Maiwand—The ANA 203rd Corps Effects Cell is Born

By Lieutenant Colonel George B. Graff, FA

Operation Maiwand took place in June 2007 and centered on Andar District, in the Ghazni Province of Afghanistan—an area known for its infestation of antigovernment elements. The area lies along a seam dividing the battlespace of adjacent units resulting in reduced coalition and Afghan National Security Force (ANSF) presence or patrols and a high concentration of antigovernment element leadership and fighters. Many schools in the area were closed by the Taliban, security was weak and antigovernment elements roamed and threatened the populace at will.

The operation's stated objectives were to separate the insurgents from the populace, to provide much needed humanitarian aid and reconstruction, and to strengthen the position of the local and national government officials of the Islamic Republic of Afghanistan without incurring civilian casualties. After attaining these objectives, additional security forces were to be emplaced to maintain the gains achieved.

A Cohesive Team. During Operation Maiwand, the Afghan National Army (ANA) 203rd Corps effects cell came together and functioned as a cohesive team, demonstrating its ability to conduct lethal and nonlethal warfare in a counterinsurgency (COIN) environment. The effects cell's effort included the dispersal of enemy elements from the area of operations (AO) and the enhancement of the relationship between the local populace and the Islamic Republic of Afghanistan without incurring civilian casualties.

This article, which outlines the 203rd Corps effects cell's structure, efforts and accomplishments, may help other ANA corps learn how to form a successful effects cell with similar results.

Lethal and Nonlethal Effects. The 203rd Corps accomplished these effects through a carefully orchestrated combination of lethal and nonlethal actions throughout the AO that were sustained during the 30-day operation. It combined the lethal effects of maneuver and fires with the nonlethal effects produced through the use of humanitarian assistance (HA), commander's emergency response program (CERP) projects, psychological operations (PSYOP), community medical assistance (CMA), and key leader engagements (KLE) to achieve the corps commander's intent for the operation.

Before this operation, the ANA 203rd Corps had relied heavily on the Coalition Forces (CF) to provide all but the maneuver elements of the combined arms package. Although it had staff positions in place to fulfill the requirements of nonlethal effects, it had not yet integrated these functions into an effective, coordinated team focused on accomplishing the commander's intent.

The ANA 203rd Corps' coalition partner, the 4th Brigade Combat Team (BCT) of the 82nd Airborne Division out of Fort Bragg, North Carolina, was instrumental in enabling the 203rd Corps effects cell to accomplish its role in the operation. The Brigade Commander Colonel Martin P. Schweitzer's guidance to his staff focused its efforts to bring the 203rd Corps staff to "take the leading role" in conducting the operation within the first week.

The 4th BCT did this by teaming up with the 203rd Corps' embedded training team (ETTs) to walk the ANA through conceptualizing, planning and executing the mission. Schweitzer made it clear that this was to be an ANA-led mission with its coalition partners playing a supporting role. All of the players performed their parts well, and the goal was achieved.

The mission was planned jointly from the beginning with the final decisions being made by Major General Abdul Khaliq, the 203rd Corps commander. Khaliq's knowledge of the AO and his instinct about how the operation should be conducted were important elements in the planning process. The other staff elements also stepped up quickly and embraced the steep learning curve that was placed before them.

For its part, the 4th BCT staff provided an abundance of technical "know how" and the technology currently missing from the ANA's arsenal of equipment. This included communication and computer systems, aviation assets, fixed-wing aircraft and intelligence gathering platforms.

However, the ANA quickly demonstrated its ability to comprehend the advantages of these systems and rapidly employed them with the help and guidance of their 4th BCT counterparts and ETTs.

Effects Cell Organization. The organization of the effects cell was modeled after the 4th BCT fires and effects coordination cell (FECC, now known as a fires and effects cell or FEC) but included elements unique to the ANA modified table of equipment. Heading up the cell was the religious cultural affairs officer. Members of the religious cultural affairs section filled many of the positions in the effects cell. The religious cultural affairs officer position and section has similarities to the US Army's chaplain position, but the Islamic culture expands the scope of duties assigned to the religious cultural affairs section significantly.

The cell's makeup included fire support, public affairs (PA), PSYOPS, information operations (IO), family support, medical support, an educational officer and a *mullah* or chaplain. During the second week of operations, the 203rd Corps effects cell began taking the lead

COL Martin Schweitzer, 4th Brigade Combat Team (BCT) Commander, 82nd Airborne Division, talks to attendees at a *shura* or council in Miri, Afghanistan, June 2007. (Photo by MAJ Gregg Lofgran, 1st Corps Artillery)

in accomplishing most of its assigned functions. By the third week, it played a leading role in the daily targeting meeting. Patient, persistent mentoring by the 4th BCT staff and support from the ETTs helped the learning process move forward.

The effects cell produced daily PSYOP media products and planned and executed daily HA, medical and veterinarian missions. It conducted combined field artillery harassment and interdiction fires using a platoon of the 4th Battalion, 2nd Brigade, 203rd Corps D30 120-mm howitzers firing with a platoon of 4th BCT's M119 105-mm howitzers. This constituted the first execution of a combined Feld Artillery mission with CF since forming the ANA.

In addition to its combined effort with the CF, the 203rd Corps also teamed up with the Afghan National Police and National Directorate of Security to provide a comprehensive approach to the operation.

Combined Forces. The sharing of intelligence, firepower and other capabilities "across the board" led to a synergistic effect and a breaking down of barriers that previously existed between these elements. This, along with the boost of confidence to the security forces in their abilities to combine forces and employ lethal and nonlethal effects using a focused targeting plan in a large-scale operation, is perhaps the greatest legacy of the operation. The nonlethal effects executed by the ANA effects cell during the operation are listed in the figure.

By the end of the operation, the local populace had jelled into a more cohesive community capable of taking a rigorous stance against the unwanted Taliban intruders that had been intimidating and harming the people in efforts to coerce their support. A shining example of this confidence in the government happened toward the end of the operation.

The National Directorate of Security received intelligence from a local source about the presence of several Taliban in one of the villages. CF at the tactical action center received the intelligence and immediately formulated a plan. The result was one enemy killed, one wounded and one captured with no injuries to CF.

- 10 schools were opened—eight were existing schools closed by the Taliban, and two were new schools.
- Of the $1,000,000 budgeted for reconstruction projects, $700,000 was committed for village wells, medical equipment and supplies, school desks and power generators. Future projects, totaling more than $35 million, include two road paving projects, a high school, a secondary school and a water retention dam are planned.
- More than 260 tons of humanitarian aid were administered during 20 humanitarian assistance missions.
- More than 3,000 radio receivers were distributed throughout the area of operations (AO).
- Six target areas received leaflet drops of 10,000 leaflets each.
- 36 press releases were prepared and submitted providing mission overviews, responding to incidents, garnering Afghan National Security Force (ANSF) support, exploiting Taliban tactics and encouraging the local populace.
- Six embedded reporters were deployed with units throughout the AO.
- Medical treatment was provided to more than 2,600 men, women and children.
- During medical operations, local medical personnel including 15 doctors, two nurses, one pharmacist, two dentists, three veterinarians, one veterinarian technician and four medics received training.
- 1,100 animals received veterinary treatment.
- 38 *shuras* or councils with local leaders were held.

Nonlethal Effects Executed by the Afghan National Army (ANA) Effects Cell During Operation Maiwand

Leading the religious cultural affairs section to the point of assuming the degree of responsibility it shouldered during Operation Maiwand did not happen overnight. In the months before the operation, the 203rd Corps senior mentor followed the Task Force Phoenix guidance to form an IO mentoring team at the corps level to begin the process of teaching the ANA how to conduct nonlethal operations.

Effects Cell Leaders. From early February until the start of the operation, the IO ETTs mentored the religious cultural affairs section in HA, CERP, KLE and PSYOPs. The section's cultural awareness and familiarity with the AO and the leaders in the various government ministries made its members naturals at planning and executing effective IO missions using the full spectrum of nonlethal tools. It conducted well orchestrated HA missions, assessed the need for and gathered the information for 17 CERP projects, held numerous KLEs and prepared and distributed a number of PSYOP products to local media. Therefore, when the time came to dedicate these skills to a large-scale operation such as Maiwand, the religious cultural affairs section was ready.

It may be somewhat unusual from a US viewpoint for the religious cultural affairs officer to be heading up the effects cell; however, in the cultural environment of Afghanistan, it may be the right answer. The religious cultural affairs officer is in a preeminent position to understand the people's needs and provide the nonlethal effects necessary to separate the insurgents from the people and sway the people to embrace a supportive position toward the government.

Lieutenant Colonel George B. Graff, Field Artillery (FA), is a Deputy Fire Support Coordinator and deployed as an Embedded Training Team Mentor to the Afghan National Army, with Headquarters (HQ), I Corps Artillery, Utah Army National Guard, in support of Operation Enduring Freedom. He has served as the G2, Assistant Fire Support Coordinator, Equal Opportunity Advisor and as a Liaison Officer for HQ, I Corps Artillery headquartered at Camp Williams, Utah. He also has served as the Executive Officer, Operations Officer and Battalion Fire Direction Officer for HQ, 2nd Battalion, 222nd FA Battalion (HQ/2-222 FA), Cedar City, Utah; and as Battery Commander, Executive Officer and Fire Direction Officer for C/2-222 FA in St. George, Utah.

KNOX AWARD
2007 Winner: B/2-321 FA

B Battery, 2nd Battalion, 321st (Airborne) Field Artillery Regiment (B/2-321 FA), 4th Brigade Combat Team (BCT), Fort Bragg, North Carolina, currently deployed to Afghanistan, is the winner of the 2007 Knox Award for Best Active Component Battery. Captain Michael R. Garry commands B Battery with NCO leader First Sergeant Samuel Glover.

The annual award is named for the first Chief of FA, Major General Henry A. Knox, a Revolutionary War hero. The award recognizes an outstanding active component battery based on specific criteria and a narrative of performance. A similar award was established in 1924, but it was phased out in 1940 as World War II loomed. The award was reestablished in 2002.

B/2-321 FA deployed to Afghanistan in support of Operation Enduring Freedom (OEF) in January 2007. During the deployment and because of its prior training, B/2-321 FA exemplified the terms agile, lethal and accurate. B Battery's extraordinary performance in the War on Terrorism (WOT) is a direct reflection of its training.

1st Platoon on Forward Operating Base Warrior (Photos courtesy of B Battery, 2nd Battalion, 321st Field Artillery)

Training. B Battery's three continental US (CONUS) training deployments demonstrated the unit's technical and tactical expertise. First, B/2-321 FA conducted a two-howitzer airborne assault into Avon Park, Florida, where the battery fired more than 1,000 105-mm rounds, safely and accurately, in support of joint Special Operations Command training.

Shortly after returning from Florida, the battery deployed to the US Military Academy (USMA) at West Point, New York, in support of cadet summer training. While deployed to USMA, the battery fired more than 1,000 105-mm rounds and trained more than 400 cadets in the tasks of battery reconnaissance, selection and occupation of position and fire mission crew drill.

After returning from USMA, the battery immediately reorganized personnel and equipment to deploy to the Joint Readiness Training Center (JRTC), Fort Polk, Louisiana. The battery quickly transformed from two four-gun Ml19A2 howitzer platoons to two two-gun Ml19A2 platoons and two M198 platoons with associated fire direction centers (FDC) to meet deployment mission requirements.

Each platoon's howitzer, FDC and leaders—led by a lieutenant platoon leader who simultaneously served as the platoon leader and fire direction officer—trained and certified in accordance with the stringent 82nd Airborne Division Redbook standards before deploying to JRTC. The battery fired more than 800 155-mm and 1,000 105-mm rounds before deploying to JRTC.

While at JRTC, the battery conducted a highly successful rotation, planning and executing two maneuver training lanes, firing 200 155-mm and 200 105-mm rounds in support of maneuver live-fire lanes and providing indirect fire support for force-on-force training scenarios.

Deploying. Prepared for war, B Battery deployed to Afghanistan in support of OEF VIII. Upon arriving in country, the battery immediately had a change of mission. It was tasked to occupy four forward operating bases rather than those originally tasked requiring the M198-trained platoon to store, certify on and man M119A2 howitzers.

Once set, B Battery occupied a footprint of more than 1,000 miles and encompassing four different Afghan provinces, providing close, indirect fire support in the battlespace of four different maneuver headquarters in both East and South regions of command. The platoons of B Battery have conducted more than 10 air-assault missions in support of maneuver operations and have participated in and fired in support of Operations Achilles, Maiwand and Khiyber. During Operation Achilles, 4th Platoon served as the adjusting element for a multinational coalition battery including both British M118 and Canadian M777 howitzers responsible for more than 60 enemy killed in action.

Since arriving in country, the battery has fired more than 3,000 105-mm rounds and is responsible for a combined battle damage assessment of more than 100 enemy killed in action.

Five Soldiers of the battery have been recommended for the Bronze Star Medal and two for the Army Commendation Medal with Valor device as achievement awards for their actions in combat thus far. All B Battery Soldiers have been recommended for the Combat Action Badge.

The battery remains agile and capable as it prepares for upcoming changes in location and task organization with respect to its supported maneuver unit. B/2-321 FA looks forward to continuing to provide the timely and lethal fire support anywhere in Afghanistan throughout its 15-month deployment.

Airborne, All The Way!

2nd Platoon on Fire Base (FB) Wilderness

4th Platoon on FB Diablo (3rd Platoon on FB Cobra not shown)

HAMILTON AWARD

2007 Winner: C/1-158 FA, OKARNG

C Battery, 1st Battalion, 158th Field Artillery (C/1-158 FA) of Anadarko, Oklahoma Army National Guard (OKARNG), part of the 45th Field Artillery Brigade, won the Hamilton Best ARNG Battery Award for 2007. Captain Donald A. Anderson commands C Battery with NCO leader First Sergeant Dennis R. Cooper.

Named for Alexander Hamilton, a Revolutionary War Artilleryman and American statesman, the Hamilton Award was established in 2002. It annually recognizes a high-performing ARNG battery based on specific criteria and a narrative.

C/1-158 FA executed an extraordinary year focused on strength, new equipment training and recruiting. C Battery exceeded numerous goals set by the National Guard Bureau (NGB) for Training Year 2007 (TY07). The unit consistently maintained high standards in strength and readiness percentages in areas reportable to NGB.

C Battery produced 15 volunteers who deployed in support of Operation Jump Start in Deming, New Mexico, which is a reflection of C/1-158 FA Soldiers desire and willingness to serve the great state of Oklahoma and the OKARNG.

Live-Fire Test. C Battery made history during TY07 with the 45th FA Brigade by conducting the first High-Mobility Artillery Rocket System (HIMARS) live fire at Fort Chaffee, Arkansas. Soldiers from C/1-158 FA uploaded one platoon of HIMARS onto two C-17 aircraft and conducted an airmobile from Fort Sill, Oklahoma, to Fort Chaffee. There, a flawless live fire was conducted sending 18 rockets down range.

Disaster Support. C Battery was called upon for support during the disaster caused by Hurricane Katrina in Louisiana. Soldiers from C Battery immediately placed their civilian careers and educational pursuits on hold to unselflessly help their fellow Americans. C Battery had Soldiers on the ground soon after the hurricane hit, helping in all aspects of the rescue and recovery operations.

Also, during TY07, C Battery was called upon to help their neighbors when the drinking water in Chickasha, Oklahoma, was affected adversely by an excessive amount of rainfall. Soldiers from C Battery recognized the importance of this mission and provided help without giving thought to their personal time.

Outstanding Audit. C Battery completed an audit conducted by the Army Audit Agency during TY07. Due to the supply sergeant and all of the Soldiers of C Battery efforts, high praise was received for the outstanding inspection results and preparedness resulting in zero significant outstanding issues.

Recruiting. Maintaining and increasing the strength of C Battery is a true reflection in the unit's ability to transform new recruits, both prior service and nonprior service, into the new lifestyle of the OKARNG.

C/1-158 FA had zero preship and split-training retention losses, exceeding the NGB goal of less than 12 percent. This is a direct result of the hard work performed by the unit's retention NCOs and the work conducted through the unit's Soldier sponsorship program. This program communicates and helps new Soldiers in the State Recruit Sustainment Program.

Recruiting became the number one priority for the OKARNG during TY07. A year-to-date gain of 13 nonprior service Soldiers and seven prior-service Soldiers is a reflection of the increased visibility and image of the ARNG through increased involvement in community events, in addition to supporting primary Field Artillery tasks, conditions and standards simultaneously.

The unit has established static displays in the community and increased a sense of awareness of what our local Readiness Center has to offer.

Community Support. Soldiers sacrificed their time and time with their families to support recruiting events. These events include support of the local Junior Reserve Officer Training Corps (JROTC) programs; work at local high school and college basketball, baseball, soccer and football games; support of career day functions at area vocational-technical colleges; setup of static displays at the rodeo; participation in city parades and carnivals; and providing color guards for all major events in surrounding areas.

These are just a few community support activities the Soldiers of C/1-158 FA volunteer their time in an effort to keep the positive image of the OKARNG visible to their community.

The Soldiers of C/1-158 FA are the true heroes in the success of the battery and its role in protecting its community, state, nation and overall freedom.

Soldiers and families make sacrifices to ensure the success of all assigned missions.

This unit has Soldiers who are skilled and proficient in their military occupational specialties and also in their civilian occupations.

With dedicated and disciplined Soldiers, C/1-158 FA is capable and ready to accomplish any state or federal mission it receives.

C Battery, 1st Battalion, 158th Field Artillery

Cruise Missile Defense:
Defending Antwerp against the V-1

By Lieutenant Colonel (Retired)
John A. Hamilton, IN

In the midst of the fierce fight to end the war in Europe, a battle, little known but of monumental proportions, took place. In all of the Army's official histories of World War II, only about two pages are devoted to the critical campaign to protect the port of Antwerp from German interdiction or destruction.[1] The campaign was Antwerp-X—the secret battle to protect the port of Antwerp from the German V-1 Buzz Bomb.

This battle lasted from October 1944 until March 1945. It required thousands of antiaircraft troops, many guns and vehicles, and tons of ammunition and supplies. No terrain or ground was seized, and it occurred in the midst of other furious combat between the Allies and what remained of the German armed forces.

During this time, the last great German offensive, Operation Wacht am Rhein (also known as the Battle of the Bulge) occurred. Although antiaircraft units participated in a ground defensive role, it eclipsed the Antwerp-X effort. But the German V-1 attacks continued and even escalated during and after the reduction of the Ardennes salient.

As a historical example of matured air defense doctrine and tactics, Antwerp-X stands out. It is an example of the versatility of combat troops and of interbranch, inter-service and international cooperation to meet and defeat a significant threat—like the threat that exists today.

Antwerp. The port city of Antwerp, Belgium, was a "peach to be plucked" from German control in September 1944. At that time, much of the supplies for the 12th and 21st Army Groups still were coming across the beaches at Normandy. With a long logistics line from the battle front to Normandy, the strain on the campaign was beginning to tell. The capture of other ports along the North Sea coast came to naught in terms of supply. They either were damaged too severely or were incapable of receiving the volume of supplies that the two army groups required. The Red Ball Express, despite spectacular success in moving supplies and materiel on 1,000-mile round trips, was wearing out men and machines at a fantastic rate. The capture of Antwerp, therefore, was vital to the war effort.[2]

On 4 September 1944, British armor entered the city and completed the capture of the port area. The port virtually was intact. Antwerp had 30 miles of wharves, 632 hoists, 186 acres of covered warehouse areas, and oil storage facilities capable of handling 100 million gallons of petroleum, oil and lubricants.[3] The port was 60 miles inland from the North Sea, however, and weeks would pass as the Americans, British and Canadians cleared the Schelde Estuary of German troops.

The campaign was conducted in appalling conditions of cold, rain, mud and flooded terrain. The mission finally was completed on 28 November 1944, when the first Allied convoy dropped anchor in the harbor. Now, the six Allied armies could be resupplied much more easily. Antwerp was open, and it had to stay open.[4]

The battle for Antwerp was over. However, the battle to keep the port open and operational was just beginning. On 13 October, before the approach to the port was cleared, the first V-1 vengeance weapon fell on Antwerp. This was mentioned in the British 7th Armored Division Intelligence Summary for the day as "something beastly fell in Antwerp yesterday."[5]

The German V-1. The German V-1—from the German word *Vergeltungswaffen*, meaning weapons of reprisal—threat was known well. The first V-1s fell on London on 12 June 1944. The British decided that American antiaircraft equipment was suited to conducting a defense well, and the 419th and 601st Antiaircraft Gun Battalions, already on the Folkestone-Dover coast, assumed an air defense mission integrated with the British air defense structure. This included the SCR-584 air defense radar coupled with the M9 gun director. This system acquired incoming V-1s and mechanically slewed the guns in the Antiaircraft Artillery (AAA) battery toward the flight path of the buzz bomb. Operating over water, the radar efficiency was improved greatly due to the lack of ground clutter. The proximity fuze, which detonated the AAA gun rounds when they came close to a target, made the system very effective against the buzz bomb.

V-1 Specifications. The V-1 was a pilotless aircraft, variously called the flying bomb, the diver, buzz bomb or doodle bug. It was 23 feet long and had a wingspan of 17.5 feet. The warhead contained 1,660 pounds of high explosive. It carried 150 gallons of fuel, any low-grade combustible of 30-octane or better. It was initially all metal, but plywood was used in some later models.

It was controlled by a magnetic compass and gyros in flight. The master gyro acted as a compass, electronically connected with the magnetic compass. Both complemented each other by continuously checking the accuracy of the flight path. Altitude was controlled by the master gyro. The range of the pilotless aircraft was controlled by a distance-measuring device operated by a small propeller in the nose. When the pilotless aircraft reached the predetermined air range, the fuel supply to the motor was cut off and the horizontal stabilizers were depressed, causing the pilotless aircraft to dive into its target and explode.

V-1 Range. The range of the pilotless aircraft was 250 miles at a speed of 350 miles per hour. Altitude could be set between 600 and 10,000 feet, but most operated at about 3,000 feet during Antwerp-X.

90-mm antiaircraft guns from B Battery, 184th Antiaircraft Artillery, guard "Buzz Bomb Lane" near Meer, Belgium, January 1945. (Photo courtesy of Air Defense Artillery Museum, Fort Bliss, Texas)

The small size of the pilotless aircraft made it a difficult target to destroy. The operating altitude generally put it out of range of .50-caliber and 40-mm guns. The most effective weapon against the pilotless aircraft was the 90-mm gun. The pilotless aircraft was not an accurate weapon, generally speaking. Its range deviation averaged about 6 miles, and lateral deviation was between 4.7 and 6.5 miles.

V-1 Capabilities. By Antwerp-X, however, the pilotless aircraft was capable of supplanting the manned German bomber or fighter-bomber. That was what the Germans intended to do regarding the port city of Antwerp. Practically speaking, the pilotless aircraft could be assembled and fired quickly from mobile launchers.[6] The launchers could be erected quickly and dismantled. Adverse weather did not affect the pilotless aircraft. To launch the Antwerp campaign, the Germans employed no more than 2,500 men.[7] It was this small force, armed with a relatively small weapon, that would endeavor to destroy the Allied logistics node in Antwerp.

The Allies. Facing this threat was a mature antiaircraft force on the Allied side. Each field army had its own antiaircraft brigade headquarters commanded by a brigadier general. The army headquarters also had an antiaircraft officer on the staff. Under the brigade headquarters was one or more antiaircraft groups. These were the equivalent of regimental headquarters, but by 1944 the organization of the group was flexible. A group might have two to five antiaircraft battalions that could be attached and detached as the mission needed.

Coordination of the antiaircraft defenses lay with the antiaircraft officer at army headquarters, insofar as the disposition and movement of troops were concerned. The antiaircraft officer coordinated the movement and disposition of antiaircraft assets, and the brigade commander implemented the antiaircraft defensive plans.

The antiaircraft units in the communications zone fell under the operational control of the Army Air Corps. The IX Air Defense Command included air corps wings responsible for enemy air interdiction and Army antiaircraft units tasked to defend critical assets. One such critical asset was the city of Paris. The 50th Antiaircraft Brigade, commanded by Brigadier General Clare Hibbs Armstrong, was the AAA unit responsible for the defense of the Paris area.

General Armstrong was called "Army" in his youth and at West Point and "Strong" thereafter. He began his career as an Infantry officer and transferred to the Coast Artillery Corps as a captain. He assumed command of the 50th Antiaircraft Brigade in early 1943, earning his general's star simultaneously. One year later, he deployed his brigade to England and entered the Normandy beachhead with Patton's Third Army. With the seizure of Antwerp, General Armstrong was tasked to move his brigade to Belgium and conduct an air defense against the anticipated air attack on the city.

The Battle. An intelligence study conducted on 2 October 1944 indicated that pilotless aircraft attack planning was underway in the German high command. On 15 October, the IX Air Defense Command was ordered to move three gun battalions into position around Antwerp. General Armstrong's staff swung into action, and the gun battalions began to move.[8]

On 27 October, the first engagement occurred. Battery D, 126th Antiaircraft Gun Battalion, was commanded by Captain Ring Kleinhesselink. At 0430, his troops detected two pilotless aircraft approaching from the southeast. The gunners checked breeches, cut fuses and prepared 90-mm rounds for firing. As the two pilotless aircraft rumbled by, the guns automatically swung toward their targets, and the gunners opened fire. The villagers of Verseldijk, Belgium, got a rude awakening when the two pilotless aircraft exploded in midair, rattling the windows of the town.

General Armstrong's 50th AAA Brigade served as the controlling headquarters for the operation. The 56th AAA Brigade soon was added to the task force. By 10 November, four antiaircraft artillery groups, consisting of seven gun battalions, two automatic weapons battalions (40-mm and Quad .50), and a British searchlight regiment, were deployed to the defense.[9] The 90-mm gun battalions were deployed in an arc southeast of Antwerp, with the automatic weapons battalions in a belt forward of the 90-mm gun line (See figure on Page 45).

All guns were dug into sandbag revetments and camouflaged. The crews set up a duty schedule, as this mission required around-the-clock vigilance. Five more gun battalions were alerted for the mission and soon were enroute. The British searchlight regiment was not there to illuminate targets; radar could acquire and track pilotless aircraft much better and in any weather, day or night. The searchlights were there to mark the irregular-shaped Inner Artillery Zone for friendly aircraft. The 40-mm guns were initially on an outer ring of the perimeter, with the M51 towed Quad .50s placed in an inner ring to provide defense in depth. The 40-mm guns were sighted 700 to 800 yards apart.

Supreme Headquarters, Allied Expeditionary Force, gave the antiaircraft units first priority of fire, subordinating the Air Corps and Royal Air Force. The Inner Artillery Zone included the area covered by the defense and the adjoining areas in the direction of approach of the V-1s. This reduced mutual interference but did not eliminate it. The data from 26 November until 11 December 1944 indicated that 375 friendly aircraft in 129 flights violated the Inner Artillery Zone for Antwerp-X.[10]

By 6 December, the additional gun battalions had arrived and were deployed in three rather than two belts. This provided greater defense in depth against the pilotless aircraft coming from the direction of Trier, southeast of Antwerp. The automatic weapons had been found wanting by this point, due to their limited range and effectiveness against pilotless aircraft flying at 3,000 feet. They were shifted to a defensive belt to the rear of the 90-mm gun belts as a last-ditch method to engage the incoming pilotless aircraft. The attacks from this direction increased until 2 December, when 50 pilotless aircraft were launched.

The German ground offensive came through the Ardennes on 16 December. The day before, V-1s began to approach from the northeast, from the directions of Tilburg and Dusseldorf. Fortunately, General Armstrong had specified that plans be drawn up and reconnaissance be conducted for shifting positions. Relocating gun battalions took all night between 17 December and 18 December; but by the 18th, six 90-mm gun battalions and an automatic-weapons battalion were in place and countering this new attack.

The distance from the new launching sites was shorter, lending more accuracy to the pilotless aircraft coming from this direction. At the same time, the city of Liege came under attack from pilotless aircraft. To counter this threat, two gun battalions were pulled from Antwerp-X and sent to the city to provide both antiaircraft defense and Field Artillery augmentation if necessary.

The Defense Plan. It was at this time that serious thought was given to developing a ground defense plan for the antiaircraft units, in case the Germans broke through and headed toward Antwerp. Two plans were developed. Plan A envisioned shifting 90-mm gun fire to a Field Artillery role, targeting road junctions, bridges, defiles and other significant points. Plan B required that antiaircraft units task-organize as Infantry to counter enemy ground attacks and protect vital areas.

Plan A required no reorganization. The 90-mm units would simply augment the Field Artillery with 90-mm indirect fire. The 150th AAA Operations Room would serve as a fire control center, and battalions could run their own fire direction centers or preregister on targets in their areas. Mobile antiaircraft-spotting teams would serve as forward observers. The 90-mm gun was reasonably good in an indirect-fire mode. The guns had high-explosive ammunition, and their high rate of fire ensured that a fire-for-effect mission could be accomplished well. Meteorological data could be furnished to the operations rooms from the Antwerp-X Meteorological Section. Bridges were identified for demolition, and the demolition orders were to be issued directly from Headquarters, Antwerp-X.

Plan B required more effort. General Armstrong oversaw the organization of a provisional regiment, commanded by Colonel Harold P. Hennessey. Colonel Hennessey served as the Antwerp-X chief of staff. His staff was drawn from the 50th AAA Brigade as an on-order mission. The remainder of Hennessey's task force was drawn from across the Antwerp-X force and formed into a provisional regiment. Three combat teams were built for a total strength of 119 officers and 2,081 enlisted men. Privates served under their own NCOs, who in turn served under their own officers. Fire support came from an automatic-weapons battalion and was composed of towed 40-mm Bofors gun and quad .50-caliber machine guns. Field Artillery support was allocated to the regiment, registering on road junctions and bridges. This force actually rehearsed against several possible enemy scenarios, including an enemy parachute assault on Antwerp. The final rehearsal tasks included identifying potential roadblocks and interdiction points and testing the routes to them. The task force was ready for action.[11]

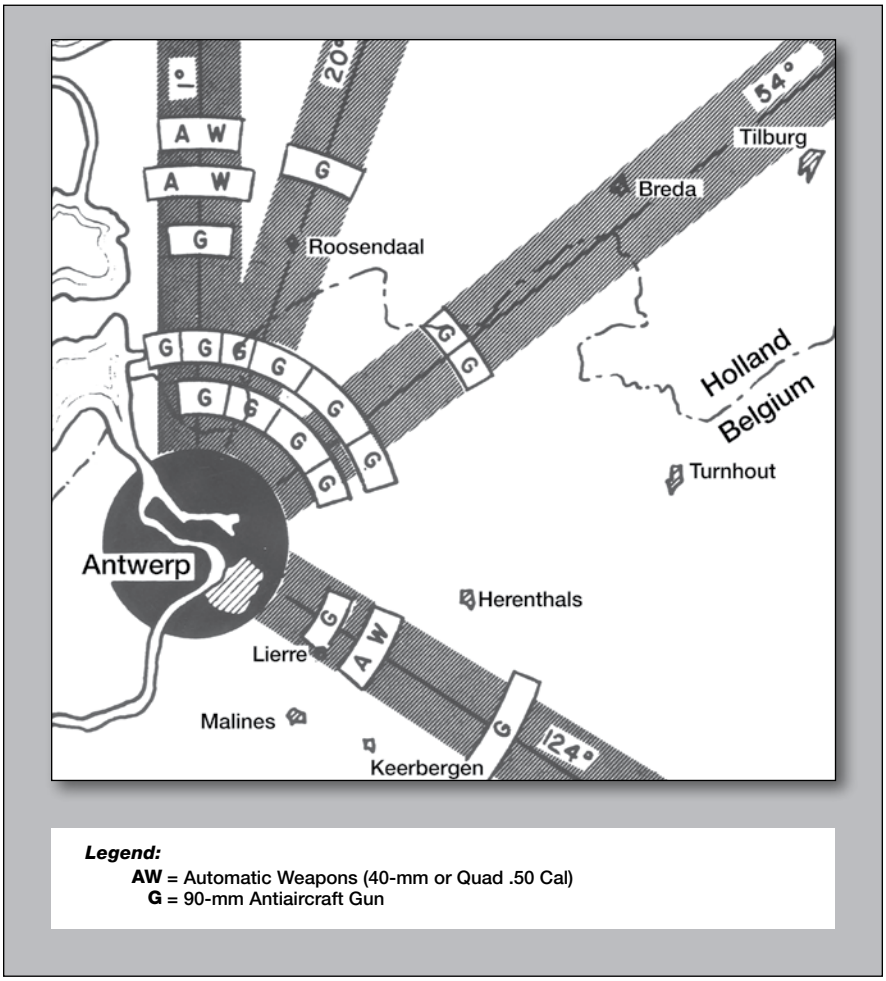
Allied Defense. On 31 January, the direction of the V-1 attacks shifted yet again. This time the attacks came from directly north of Antwerp. The V-1s from this direction were at lower altitude and climbing, suggesting that the launch points were much closer than the others had been. An additional complication was the location of an Allied airfield to the north. Airfield B79 was one of the largest on the European continent. To cope with the interference, the Army Air Corps actually moved the airfield elsewhere, out of the way of the V-1 flight paths. The V-1 attacks from the northeast continued, as well as a few from the southeast. The attacks were intensifying, and the AAA troops really were feeling the strain.

February 28 brought the peak of the attacks. By this time V-1 attacks averaged 160 each 24-hour period, coming from three directions. But the effectiveness of the AAA defenses had improved. Of 91 V-1s launched during 6 days, 89 were destroyed—an effectiveness of 97.8 percent. As the Allies overran the launch sites, the attacks tapered off until March 1945, when they stopped altogether.

The Antwerp-X operation required more than a division's worth of antiaircraft troops. The total strength of the operation exceeded 22,000 American, British and Polish troops for the five-month campaign. The weapons used included 208 90-mm guns, 137 British 3.7-inch guns, and 188 American, British and Polish 40-mm guns. The operation consumed 3,255,000 sandbags, 532,000 rounds of 90-mm ammunition, 1 million gallons of gasoline, and 8.5 million pounds of coal. Allied casualties included 32 killed-in-action and 298 wounded.

Of all of the V-1s launched, only 211 got into the 8-mile circle around the port.

US Soldiers search the skies for German V-1 bombs and prepare their 40-mm antiaircraft automatic weapon above Wiltz, Luxembourg, near the end of World War II. (Photo courtesy of Air Defense Artillery Museum)



Late-winter 1945 V-1 Avenues of Approach from Holland and Germany

The operation destroyed 2,183 pilotless aircraft, with 648 destroyed in mid-air and 1,535 forced to crash in open fields short of their targets. The port never lost a day of operations all during the onslaught.[12] What is remarkable is how many troops and systems it took to defend against a relatively small number of enemy troops, armed with a large number of relatively simple unmanned airborne weapons.

Lessons Learned. A substantial threat exists today in the current operating environment from unmanned aircraft or cruise missiles. "Eighty countries currently have some kind of cruise missile. Sixty-two countries import these weapons from more than 20 countries that manufacture and export them. They constitute a 360-degree threat and can carry conventional warheads, weapons of mass destruction or anti-armor submunitions. The range of these runs from 30 to 300 kilometers."[13]

In Operation Iraqi Freedom (OIF), the Iraqis employed Chinese cruise missiles against the Coalition Forces. "On 1 April 2003, the Iraqis launched three Chinese Seersucker missiles from Al Faw peninsula toward Coalition Forces in Kuwait. These came in low and fast. Two landed near the border between Iraq and Kuwait, hitting nothing. The third landed in Kuwait proper, in an area recently vacated by the 1st Marine Expeditionary Force units. Although these missiles were detected, they were not engaged, partly due to their low flight elevations."[14]

Countering this threat could require the same level of effort that Antwerp-X called for. American or Coalition Forces will have to form a coordinated defense that has been exercised in training. Air space management will be critical, as the possibility of fratricide will exist. Air Defense units armed with the latest in technology will destroy incoming missiles and relay their launch points for other arms to attack. Certainly Field Artillery as well as Air Force and Navy air assets will have to be nimble enough to engage the launchers as rapidly as possible.

The performance and versatility of the antiaircraft troops in the Antwerp-X campaign set a standard for future warfare. In addition to conducting a coordinated defense against the V-1, the antiaircraft forces prepared to augment Field Artillery and conduct ground combat as infantry. The extent to which the Antwerp-X force prepared for contingency missions is worth study. The Soldiers and officers produced at the new Fires Center of Excellence must match the performance of the Antwerp-X soldiers in future combat. Antwerp-X forms a strong example of what the Fires Center must foster in future warfare.

Endnotes:

1. Charles B. MacDonald, *The Siegfried Line Campaign*, (Department of the Army, Washington, DC: Office of the Chief of Military History, 1963), 229-230.
2. The Story of Antwerp-X, a color pamphlet produced by the Antwerp-X headquarters in 1945 to document the operation. It is recreated in its entirety and available at http://www.skylighters.org/buzzbombs/antwerpx.html, accessed on 6 September 2006.
3. Ibid, 11.
4. MacDonald, 229.
5. Ibid, 229 and in footnote 64.
6. The Fort Bliss ADA Museum curators assembled a complete V-1 for display using the original instructions, a socket wrench and a screw driver.
7. The V-1 characteristics came from the report of the General Board, US Forces, European Theater, "Tactical Deployment of Antiaircraft Artillery Units Including Defense against Pilotless Aircraft (V-1)," Study #38, established by General Orders 312, 20 November 1945.
8. General Board Report, 20 November 1945, 43.
9. The gun battalions were the 125th, 126th, 184th, 405th, 407th, 494th and 740th. The automatic weapons battalions were the 788th and 789th. Appendix VI, General Board Report, 20 November 1945.
10. Supreme Headquarters, Allied Expeditionary Force, *Air Defense Review*, produced by the Air Defense Division, Issue #9, 3 June 1945, Copy #215, 148.
11. The Story of Antwerp-X, 32-39.
12. Facts taken from The Story of Antwerp-X and *Air Defense: An Historical Analysis, Volume II*, (US Army Air Defense School, Fort Bliss, TX: June 1965), 147.
13. From the National Air and Space Intelligence Center (NAIC) and the Center for Defense and International Security Studies; quoted in the USAADASCH offsite briefing, slide #8; and in the 2005 Air Defense Artillery Annual History.
14. *History of the 32nd Army Air and Missile Defense Command (AAMDC) in Operation Iraqi Freedom Theater Air and Missile Defense*, September 2003, 78.

Lieutenant Colonel (Retired) John A. Hamilton, Infantry (IN), is the Air Defense Artillery Command Historian at Fort Bliss, Texas. He has been published in magazines including *Infantry* and *Air Defense Artillery*. He holds a Master's in History from the University of Southern California in Los Angeles. Before retiring from active duty in 1994, his assignments included the Combined Arms Training Activity at Fort Leavenworth, Kansas, the University of Arkansas and at the Military Personnel Center in Virginia. He served in the MultiNational Force and Observers in the Sinai, in Operation Urgent Fury in Grenada and in Operation Just Cause in Panama.

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An M198 155-mm howitzer fires at a target in eastern Afghanistan. The howitzer is crewed by paratroopers from the 2nd Battalion, 321st Field Artillery (2-321 FA) (Airborne), and Artillerymen from the Puerto Rico Army National Guard 1-162 FA. (Photo by PFC Micah E. Clare, Task Force Fury Public Affairs)

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